APPENDIX 1:

GUIDELINE DEVELOPMENT GROUP MEMBERSHIP AND ACKNOWLEDGEMENTS

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Tony Bleetman, Consultant in Accident and Emergency Medicine, Birmingham Heartlands Hospital

Frank Corr, Executive Director, Kneesworth House Hospital

Jane Cronin-Davis, Senior Lecturer in Occupational Therapy, Faculty of Health, Leeds Metropolitan University

Donna-Maria Fraher, Southern Derbyshire User Voice

Edwin Gwenzi, Research Fellow, Health Services Research Department, Institute of Psychiatry

Phil Hardy, Chairman for the Institute of Conflict Management (previously Andrew McKenzie-James)

Susan Johnston, Senior Lecturer/Consultant, Rampton Hospital, Nottinghamshire Healthcare NHS Trust

Sophie Jones, National Voices Forum

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National Collaborating Centre for Nursing and Supportive Care
Staff at the NCC-NSC who contributed to this guideline were:

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Gill Harvey, Director

Jo Hunter (previously Robin Snowball), Information Specialist

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Louise Nelstrop, R&D Fellow

Edward Weir, Centre Manager
APPENDIX 2:

NATIONAL INSTITUTE FOR CLINICAL EXCELLENCE

SCOPE

Guideline title

Disturbed (violent) behaviour: the short-term management of disturbed (violent) behaviour in in-patient psychiatric settings.

Short title

Disturbed (violent) behaviour.

Background

a) The National Institute for Clinical Excellence (‘NICE’ or ‘the Institute’) has commissioned the National Collaborating Centre for Nursing and Supportive Care (NCC-NSC) to develop a clinical guideline on the short-term management of disturbed (violent) behaviour in in-patient psychiatric settings for use in the NHS in England and Wales. This follows referral of the topic by the Department of Health and National Assembly for Wales (see Appendix). The guideline will provide recommendations for good practice that are based on the best available evidence of clinical and cost effectiveness.

b) The present guideline will update and extend the previously published guidance Management of imminent violence: clinical practice guidelines to support mental health services produced by the Royal College of Psychiatrists (1998).

c) For the purposes of the present guideline, short-term management is defined as the response to disturbed (violent) behaviour occurring immediately before or after the event, with consideration of interventions that extend to no more than three days after the disturbed (violent) behaviour.

d) The Institute’s clinical guidelines will support the implementation of National Service Frameworks (NSFs) in those aspects of care where a Framework has been published. The statements in each NSF reflect the evidence that was used at the time the Framework was prepared. The clinical guidelines and technology appraisals published by the Institute after an NSF has been issued will have the effect of updating the Framework.

Clinical need for the guideline

Disturbed or violent behaviour by an individual in an adult in-patient psychiatric setting poses a serious risk to that individual, other service users and, particularly, to staff. In 1998/99, an NHS Executive survey found that there were approximately 65,000 violent incidents against staff across the NHS. The average number of incidents in mental health/learning disability trusts was over three times the average for all trusts. The Mental Health National Service Framework stipulates that staff should be competent to assess the risk of violence, manage
individuals who may become violent, and that staff should know how to assess and manage risk and ensure safety. The effective short-term management of disturbed or violent behaviour is a means of helping to minimise the risk of injury to the individual patient, other service users and staff involved in these types of incident.

The guideline

a) The guideline development process is described in detail in three booklets that are available from the NICE website (see ‘Further information’). The guideline development process – information for stakeholders describes how organisations can become involved in the development of a guideline.

b) This document is the scope. It defines exactly what this guideline will (and will not) examine, and what the guideline developers will consider. The scope is based on the referral from the Department of Health and National Assembly for Wales (see Appendix).

c) The areas that will be addressed by the guideline are described in the following sections.

Population

Groups that will be covered

a) Adult service users (≥16 years) who are currently admitted to in-patient psychiatric settings.

Groups that will not be covered

a) Adult psychiatric service users not currently admitted to in-patient settings.

b) People with learning disabilities.

c) People with a primary diagnosis of substance abuse.

d) Children or adolescents (<16 years).

e) Older persons with an organic mental disorder (for example, any form of dementia) or a progressive neurological disease (for example, Parkinson’s Disease).

Health care setting

a) The guideline will cover the care received from health care professionals who have direct contact with and make decisions concerning the care of NHS service users in adult in-patient psychiatric settings (including high, medium and low security psychiatric hospitals and NHS hospitals).

b) The guideline will also be relevant to, but will not cover, practice regarding:
Violence: The Short Term Management of Disturbed/Violent Behaviour in Psychiatric in-patients and Emergency Departments Guideline

- the medium to long-term prediction, causation and management of violent behaviour in adult in-patient psychiatric settings
- mental health service users not currently admitted to adult in-patient psychiatric settings
- violent incidents committed by people other than adult in-patient psychiatric services users.

c) This is an NHS guideline. Although this guideline will address the interface with other services, such as those provided by social services, secure settings and the voluntary sector, it will not include services exclusive to these sectors.

Clinical management

The guideline will include advice on the short-term management of disturbed (violent) service users in adult in-patient psychiatric settings, covering the following areas.

a) The identification of potentially violent service users (for example, the use of psychometric instruments, the responsibilities of staff and management, risk assessment).

b) The use of de-escalation and other short-term psychosocial intervention methods aimed at preventing the occurrence of violence.

c) The use of seclusion.

d) The use of physical restraint (for example, mechanical restraints, ‘control and restraint’ procedures).

e) The use of rapid tranquillisation if short-term psychosocial intervention methods have failed.

f) The training or education requirements for the above-mentioned interventions.

Advice on treatment options will be based on the best evidence available to the development group. When referring to pharmacological treatments, the guideline will normally recommend use within the licensed indications. Exceptionally, and only where the evidence supports it, the guideline will recommend use outside the licensed indications. The guideline assumes that prescribers will use the ‘Summary of product characteristics’ to inform their prescribing decisions for individual service users.

Audit support within guideline

Level two audit criteria will be identified within the guideline.
Status

Scope
This is the final version of the scope.

Guideline
The development of the guideline recommendations will begin in March 2002.

Further information
Information on the guideline development process is provided in:
- *The guideline development process – information for the public and the NHS*
- *The guideline development process – information for stakeholders*
- *The guideline development process – information for national collaborating centres and guideline development groups.*

These booklets are available as PDF files from the NICE website ([www.nice.org.uk](http://www.nice.org.uk)). Information of the progress of the guideline will also be available from the website.

Referral from the Department of Health and National Assembly for Wales
The Department of Health and National Assembly for Wales asked the Institute: “To prepare clinical guidelines for the NHS in England and Wales for the short-term management of disturbed (violent) behaviour in in-patient psychiatric settings, including consideration of pharmacological, physical (including seclusion and restraint), preventative and psychosocial interventions.”
Appendix 3: An outline of how the clinical questions deliver the remit via the scope

Remit: To prepare clinical guidelines for the NHS in England and Wales for the short-term management of disturbed/violent behaviour in in-patient psychiatric settings, including consideration of pharmacological, physical (including seclusion and restraint), preventative and psychosocial interventions.

Interventions that must be covered by the guideline, according to the remit

A) Pharmacological
B) Physical
   (including seclusion and restraint)
C) Preventative
D) Psychosocial

How these are broken down in the scope

A1. Rapid tranquillisation
B1. Restraint - physical and mechanical
   (includes use of pain compliance)
   B2. Seclusion and time out
C1. Prediction
C2. Risk factors
C3. Environment
D1. De-escalation
D2. Observation

Four topics run across these areas and they are:
1. Training
2. Staff and service user perspectives
3. Issues of ethnicity, gender and physical disability
4. The use of these interventions and issues around admission and A&E

How there are translated into evidence reviews

1. Rapid tranquillisation
   (also includes PRN medication)
1. Restraint
   2. Seclusion
1. Prediction
   2. Risk factors
   3. Environment
   4. Alarms (part of environment)
1. De-escalation
   2. Observation

1. Training
2. Staff and service user perspectives
3. Ethnicity
4. Gender
5. Physical disability
6. Admission and A&E
### The Clinical questions addressed in each evidence review

#### RAPID TRANQUILLISATION  PHYSICAL INTERVENTIONS AND SECLUSION  PREDICTION AND RISK FACTORS

1. What is the effectiveness of brief or fast acting pharmacological interventions for the short-term management of disturbed/violent behaviour in adult psychiatric in-patient settings?
2. How safe are the pharmacological agents that are used for rapid tranquillisation and what are the side effects?
3. What are staff and service users’ views/perceptions about the effectiveness and appropriateness of pharmacological interventions as a means of intervening in a disturbed/violent and imminently violent situation?
4. How safe and effective is PRN medication for the short-term management of disturbed/violent behaviour in adult psychiatric in-patient settings?
5. What are the risk factors and antecedents for disturbed/violent behaviour in psychiatric in-patient settings? Do they have good predictive validity?
6. Which instruments most reliably predict disturbed/violent behaviour in psychiatric settings in the short-term? Do they have good predictive validity?
7. Are there any identifiable staff characteristics that act as risk factors for disturbed/violent behaviour?
8. What factors do service users and staff report as increasing the risk of disturbed/violent behaviour?

#### ENVIRONMENT AND ALARMS

1. Are physical interventions safe and effective for the short-term management of disturbed/violent behaviour in psychiatric in-patient settings?
2. Is seclusion safe and effective for the short-term management of disturbed/violent behaviour in psychiatric in-patient settings?
3. What are staff and service users’ perceptions of the use of physical interventions and seclusion in adult psychiatric in-patient settings?

#### DE-ESCALATION

1. Are psychosocial techniques, such as de-escalation, effective in pre-empting, dissipating or preventing disturbed/violent behaviour in adult psychiatric in-patient settings?
2. What are staff and service users’ views about the effectiveness and appropriateness of de-escalation techniques as a means of diffusing disturbed/violent and potentially violent situations?

#### OBSERVATION

1. Are psychosocial techniques, such as observation, effective in pre-empting and preventing disturbed/violent behaviour?
2. What are staff and service users’ views about the effectiveness and appropriateness of observation as a means of pre-empting and preventing disturbed/violent and potentially violent situations?
Violence: The Short-Term Management of Disturbed / Violent Behaviour in Psychiatric In-patients and Emergency Departments Guideline

**GENDER**

1. What impact does gender have on the short-term management of disturbed/violent behaviour in psychiatric in-patient settings?

2. What are staff and service users’ perspectives on whether gender has an impact in the management of disturbed/violent behaviour in psychiatric in-patient settings?

**ETHNICITY**

1. Does the race/ethnicity of a service user or staff member make a difference as to how they are treated when they are involved in a disturbed/violent incident in adult psychiatric in-patient settings?

2. Do staff and service users perceive that the race/ethnicity of a service user or staff member makes a difference as to how they are treated when they are involved in a disturbed/violent incident in adult psychiatric in-patient settings?

**SPECIAL CONCERNS**

1. What special considerations are needed in the short-term management of disturbed/violent behaviour, where the service user has physical disabilities?

2. What are staff and service users’ perspectives of the considerations needed for the short-term management of disturbed/violent behaviour, where the service user has physical disabilities?

**ACCIDENT AND EMERGENCY SETTINGS**

1. How is disturbed/violent behaviour by psychiatric patients best managed in the short-term in A&E settings, immediately prior to admission to an adult psychiatric in-patient setting?

2. What are the views of staff and service users about the short-term management of disturbed/violent behaviour by psychiatric patients in an A&E setting?

**TRAINING**

1. What are the most effective and safe training programmes for the prevention of and the short-term management of disturbed/violent behaviour in adult psychiatric in-patient settings?

2. What are the views of staff and service users about the various training programmes in adult psychiatric in-patient settings and their content?

**STAFF AND SERVICE USER PERSPECTIVES**

1. Do staff and service users perceive themselves as safe in psychiatric in-patient settings?

2. What impact does disturbed/violent in psychiatric in-patient settings have on staff and/or service users?

3. What are staff and service user attitudes towards the short-term management of disturbed/violent behaviour?
Appendix 4:

SEARCH STRATEGIES AND DATABASES SEARCHED

Search history
The rationale for the time period covered in the searches was based on an examination of the Royal College of Psychiatrists (RCPsych) (1998) guideline, which indicated that the majority of studies included for consideration appeared after 1985 (68 studies included; six studies pre-1985). Additional articles and those published before 1985 were identified through manual searches of the reference lists of retrieved studies and through consultation with stakeholders and Guideline Development Group members.

Searches were run from 1984/5-2002/2003, depending on the review question – see search log table below. After crosschecking all earlier studies found by our searches against the RCPsych evidence-base, any pre-1995 studies missed by their searches were added to the total number of articles that had been identified by the information scientist. These were then subjected to two further sifts by two reviewers, along with all the post-1995 studies.

All searches were updated at four to six monthly intervals, using Premedline.

NB: Search strategies undertaken for the Cochrane reviews cited in the full guideline – that is, relating to seclusion and restraint; rapid tranquillisation and PRN medication - are available from the NCC-NSC or Cochrane groups that undertook the reviews.

Major databases
The major databases - MEDLINE, EMBASE, PSYCINFO, and CINAHL - were searched for all topics. These are very large literature databases that allow entry and refinement of complex, saveable search strategies.

Other databases
To supplement the searches, unless otherwise stated, the following databases and web sources – which do not support searching using complex search strategies - were searched for all or any interventions for violent behaviour etc. involving mental disorders, including de-escalation. This included the Cochrane Library database, which is best searched broadly, and similarly SIGLE and HMIC for ‘grey’ literature, ZETOC that only supports simple one- or two-term search strategies, and specialist web search engines, such as BIOME.

Other databases sources are listed as follows:
AMED – Alternative Medicine Database
BNI – British Nursing Index
BIOLOGICAL ABSTRACTS
COCHRANE LIBRARY
NHS Centre for Reviews & Dissemination
Health Technology Assessment Database
ReFeR (Department of Health Research)
COIN (DH Circulars Library)
POINT (DH Publications Library)
Guidelines sources - used to search for guidelines on any of the topics covered by this guideline prior to evidence reviewing:

- US National Guideline Clearing House
- Swedish Council on Technology Assessment in Health Care
- Canadian Medical Association Clinical Practice Guidelines Database
- BMJ Guidelines
- New Zealand Guidelines Group
- St. George’s Hospital Appraisal of NHS Guidelines
- CDC - Centres for Disease Control & Prevention (USA)
- Centre for Evidence-based Mental Health
- Centre for Health Services Research
eGuidelines
cMJA Guidelines (Medical Journal Australia)
Medic8.com
HSTAT – US Health Services Technology Assessment Text
National Clinical Guidelines Database (NeLH)
National Health & Medical Research Council (Australia)
RCN Guidelines
Royal College of Physicians Guidelines Databases
SIGN – Scottish Intercollegiate Guideline Network

Additional information

1. The database platform used was SilverPlatter (in its Windows version, WinSpirs). Other platforms, such as Ovid, require different conventions and symbols, but the strategies will translate directly. Database terminology varies between databases and different vendors’ versions of databases.

2. The search strategies represent a Thesaurus (Silver Platter) or Subject (Ovid) search – in this example a MESH search from MEDLINE – i.e. a search on indexer headings or ‘descriptors.’
On different databases, Thesaurus terms vary: so (1) below from the 'general search strategy' would become, on EMBASE for example: 1. explode “mental disease”/all subheadings.
3. The other search statements represent Textword or Free Text or ‘natural language’ searches (again terminology varies), searching author terms in titles or abstracts of database records. In general, Free Text search terms have been preferred - once a check has been made that any corresponding descriptors and any nested terms would be included – since these are transferable between major databases (some other sources do not support descriptor searching) and indexing may be inconsistent or unreliable for very high-sensitivity searches of the kind required here. The descriptors can be searched with the free text terms (see note 4), and processing may be quicker for a complex strategy.

4. The Free Text search strings were suffixed with field search qualifiers so that the terms are searched only in the major fields of each record (title, abstract and descriptors), and not, for example, in journal title or address fields. Again, this differs between databases – for example:

   violence in ti,ab,mesh (MEDLINE)
   violence in ti,ab,dem,der (EMBASE) etc.

5. The operator ‘near’ searches terms (or sets of alternative terms) within the same sentence of a record title or abstract – ‘and’ searches simultaneous occurrences anywhere in the records. (The number qualifier – for example, near4 – searches the terms within that number of words in the sentence).

6. The ? symbol is a ‘wildcard’ standing for 1 or 0 characters (including a hyphen) within a word, on Silver Platter databases.

7. The * (asterix) symbol is a ‘truncation’ or ‘stemming’ symbol, which captures variant word-endings by including any number of characters (including 0) at the end of a word, on Silver Platter databases.

**General search strategy**
A general search strategy was developed as follows:

1. explode "Mental-Disorders"/ all subheadings
2. mental* or psychiatr* or psycholog* or forensic or paranoi* or psychos?s or psychotic or schizo* or anxiety or hysteric* or mania* or manic or hypo?man* or depress* or mood* or affective or bi?polar
3. dual near4 diagnos?s
4. impuls* near4 control*
5. personalit* near disorder*
6. delud* or delusive or delusion*
7. 1 or 2 or 3 or 4 or 5 or 6
8. violen* or agonistic or disturb* or hostil* or agitat* or anger or angry or un?toward or rage* or bizarre or harass* or intimidat* or aggress* or danger* or attack* or threat* or abus* or combative or assault* or disrupt*
9. 7 and 8

**Specific searches**
Prediction
Two separate search strategies were added to the general search strategy:

Strategy 1:
10 risk* or predict* or antecedent* or assess* or precipitant* or correlate* or factor*
or preceded* or precipitate*
11 9 and 10

Strategy 2:
10 psychometr* or instrument* or tool* or rate* or rating or scale* or measur* or
test or tests or screen* or identif* or question*
11 9 and 10

Over the four major databases:
   Strategy 1 produced 51,126 references, of which 785 were selected (1.54%)
   Strategy 2 produced 29,228 references, of which 71 were selected (0.24%)

(Total: 80,354 references retrieved, 856 selected (1.07%)

ZETOC was also searched. No other sources were searched for this specific topic, due
to time pressures.

De-escalation
The following search strategy was added to the above:

10 de?escalat* or de?stimulat* or de?fus* or talk down or talk?down or non
aversive* or non?aversive* or non confrontat* or non?confrontat*
11 psycho?social or verbal* or non verbal* or non?verbal* or talk*
12 interven* or prevent* or manag* or train* or educat* or method* or strateg*
or technique*
13 11 near 12
14 10 or 13
15 9 and 14

BNI, Zetoc, HMIC and web of science were also searched.

Observation
The following search strategy was added to the general search strategy:

10 specialling or specialled
11 one-to-one or one-on-one
12 (close* or special* or maximum or continuous* or constant* or 15-minute or
regular* or frequen*) near (check* or observ* or attention or supervis* or surveill*)
13 10 or 11 or 12
14 9 and 13

Seclusion/restraint
The following search strategy was added to the general search strategy:
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10 (coerc* or compulsor* or involunt* or seclu* or break away or break?away or pain* near complian*)
11 (lock* or padded or secure) near (room* or unit* or facil* or department* or ward* or clinic* or hospital* or centre* or center*)
12 (pin* or hold* or held) near (down or back)
13 (restrain* or isolat* or im?mobili* or detain* or commit* or constrain* or confin* or sequestrat* or time?out or act?out*)
14 10 or 11 or 12 or 13
15 9 and 14

Rapid tranquillisation
The following search strategy was added to the general search strategy:

10 (forc* or rapid* or urgen* or immediate* or emergene* or short term or short?term or brief* or quick* or fast) near (tranquil* or sedat* or medicat* or neurolept* or anti?psychotic* or antipsychotic*)
11 (chemical* or pharmacol*) near (restrain* or tranquil* or immobili*)
12 10 or 11
13 9 and 12

Comparison of NCC-NSC search strategies for rapid tranquillisation with those used in NICE schizophrenia guideline (2002)

Databases used:


Comments:
- NCC Mental Health – some differences in starting points for searches, but all up to 2002.
- NCC-NSC searched more databases and consistently covered years (1985-2002 in most cases).

Search terms used by NCC mental health

[(psychiatric near3 emergenc*)
or (rapid* or acute* or short-acting or fast-acting or emergenc* or urgent) near3 (sedat* or tranquil*)
or (chemical* or pharmacological) near3 (restrain* or (acute near3 agitation))}
or (haloperidol[mesh] or promazine[mesh] or lorazepam[mesh] or diazepam[mesh] or flunitrazepam[mesh] or clonazepam[mesh] or midazocam[mesh] or prochlorperazine[mesh] or benzodiazepines[mesh] or chlorpromazine[mesh] or clopenthixol[mesh] or neuroleptic-agent[mesh]) and [emergenc* or “emergency-health-service”[mesh] or agitat* or aggress* or distress* or (acute near3 psycho*) or (acut* near2 disturb*)] not [“animal”[mesh] or dementia or (brain near3 injur*) or epilepsy or seizure or elderly or aged or (mental near3 retard*) or an?esthetic or (alcohol near3 withdrawal) or intubation or ventilation or (status near3 epilepticus)] in ti.

Comments:
NCC-NSC used most of the search terms used for the NCC mental health guideline, except for acute, short-acting, agitation, distress*, the names of individual drugs, and the not [in ti] section.
Both search strategies are complex and approach the topic in different ways. NCC-NSC uses more search terms, and emphasises mental disorders/violence. The NCC mental health search strategy concentrates on the chemical interventions.

Training
The following search strategy was added to the general search strategy:

10 (train* or educ*)
11 9 and 10

Ethnicity
The following search strategy was added to the general search strategy:

10 (race or races or racial* or ethnic*)
11 (asian* or african* or black or indian* or pakistani* or bangladesh* or latin* or non?white* or multi?cultur* or afro-caribbean)
12 10 or 11
13 9 and 12

Gender
The following search strategy was added to the general search strategy:

10 (male* or female* or wom?n or man or men or masculin* or feminin*)
11 (gender near3 differen*)
12 (sex near3 differen*)
13 10 or 11 or 12
14 9 and 13
15 inpatient* and psychiatr*
16 14 and 15
17 (child* or infant* or adolescen* or elderly) in ti
18 16 not 17

Searches were run from 1996-2003/6, to include current legislation, attitudes and organisation of care relating to this topic.
Physical disability
The following search strategy was added to the general search strategy:

10 (physical* near3 (disabilit* or disabl* or handicap* or challenged))
11 (impair* near3 (physical* or motor or hearing or visual*))
12 (deaf or blindness)
13 (wheelchair near2 (bound or user*))
14 10 or 11 or 12 or 13
15 9 and 14
16 inpatient* and psychiatr*
17 15 and 16
18 (child* or infant* or adolescen* or elderly) in ti
19 17 not 18

Searches were run from 1996-2003/6, to include current legislation, attitudes and organisation of care relating to this topic.

Accident and emergency settings
The following search strategy was added to the general search strategy:

10 "accident and emergency"
11 emergen* near3 (centre* or center* or unit* or room* or department* or service*)
12 accident near3 (centre* or center* or unit* or room* or department* or service*)
13 trauma near3 (centre* or center* or unit* or room* or department* or service*)
14 a&e
15 emergicent*
16 10 or 11 or 12 or 13 or 14 or 15
17 9 and 16

Environment
The following search strategy was added to the general search strategy:

10 (milieu* or atmosphere*) or (structure* or build*)
11 (design* or architect*) or (plan* or lay?out*)
12 secure or security*) or (lock* or closed*)
13 setting* or work?place*) or (environment*)
14 (clinic or clinics) or (room or rooms)
15 (centre or centres) or (center or centers)
16 (unit or units) or (ward or wards)
17 (facilit* or hospital*) or (department* or institut*)
18 explode 'Health-Facilities' / all subheadings
19 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18
20 9 and 19

Search logs
<table>
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<tr>
<th>Search</th>
<th>*Search period (for main searches, not updates)</th>
<th>Overall hits</th>
<th>Downloaded (for further sifting)</th>
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<td>Prediction/risk Factors</td>
<td>1985-Jan 2003</td>
<td>53,189</td>
<td>2088</td>
</tr>
<tr>
<td>De-escalation</td>
<td>1984-June 2002</td>
<td>3550</td>
<td>307</td>
</tr>
<tr>
<td>Observation</td>
<td>1985-Dec 2002</td>
<td>6540</td>
<td>70</td>
</tr>
<tr>
<td>Seclusion/restraint</td>
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<td>Rapid tranquilization</td>
<td>1985-June 2003</td>
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<td>Training</td>
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<td>178</td>
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*All searches were updated four to six monthly, using Premedline

NB: Breakdown of number of hits (prior to sifting) by database is available from the NCC-NSC.
## Appendix 5: Evidence tables – included studies

### 5.1 Environment and alarm systems

<table>
<thead>
<tr>
<th>Source</th>
<th>Study design</th>
<th>Aims of study</th>
<th>Outcome measures</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bowers et al. (2002)</td>
<td>Postal survey. Country: UK Evidence level 2+</td>
<td>To identify current strategies and security measures used in acute psychiatric wards in London.</td>
<td>Questionnaire with four main parts:</td>
<td>Response rate =70%</td>
</tr>
<tr>
<td></td>
<td>Setting: 122 NHS &amp; 19 private, acute admission wards. Population: 122 NHS and 19 private care wards.</td>
<td></td>
<td>• a) survey of banned items • b) searching policy • c) practices (for example, locking doors, counting cutlery) • d) present or absent items (for example, intercom, alarms, CCTV).</td>
<td>- Alarms</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Data analysed with descriptive statistics and Pearson correlation tests.</td>
<td>- Panic alarms (sounded in whole unit 56%, ward only 18%, didn’t have 13%)</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>- Personal alarms (Yes 44%, No 45%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>- Emergency tel. ext. (yes 42%, no 45%)</td>
</tr>
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<td></td>
<td></td>
<td>- Panic alarms in rooms (all rooms 36%, some rooms 32%, no rooms 20%)</td>
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<td>- Panic alarms in office only (Yes 3%, No87%).</td>
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<td></td>
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<td></td>
<td>Author noted two types of unrelated security systems:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Type A (door security, restrictions, banned items)</td>
</tr>
<tr>
<td></td>
<td></td>
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<td></td>
<td>Type B (searches, guards, alarms).</td>
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<tr>
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<td>Nine wards that had taken part in a previous study associated type A</td>
</tr>
<tr>
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<td>positively with absconding rates and type B negatively with aggressive/angry behaviour.</td>
</tr>
</tbody>
</table>

**Reviewer’s comments**

- Survey currently being replicated in N. Ireland.
- Association of type A and type B security with less absconding and less violence based on small sample.
<table>
<thead>
<tr>
<th>Source</th>
<th>Study design</th>
<th>Aims of study</th>
<th>Outcome measures</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crowner et al. (1994)</td>
<td>Descriptive</td>
<td>A comparison of video cameras and official incident reports in detecting in-patient assaults.</td>
<td>• Number of assaults.</td>
<td>• Video cameras detect more but milder episodes of violence than nurses record.</td>
</tr>
<tr>
<td></td>
<td>Setting: in-patient</td>
<td></td>
<td>• Type of assaults.</td>
<td></td>
</tr>
<tr>
<td>Evidence level: 2-</td>
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</tbody>
</table>

**Reviewer’s comments**
- Taken from RCPsych review.
Haller et al. (1996)

Country: US
Evidence level: 2-

Uncontrolled before-and-after design
Setting: 16-bed locked in-patient psychiatric unit.
Population: 162 patients and 83 staff.

Aims of study
To analyse staff and service users' attitudes to a complete smoking ban on a locked ward.

Outcome measures
- Staff: completed ward atmosphere scale (WOS) one month before and one month after the smoking ban. Also author designed questionnaire to measure the attitudes towards, and the perceived impact of the smoking ban.
- Patients: all service users discharged during the month before the ban and discharged beginning one month and up to four months after the policy change, completed a survey of perceived impact of the smoking ban.
- For the month before and the first four months after the ban retrospective analysis of demographic data, use of PRN medications, use of seclusion and/or restraints, discharges against medical advice, elopements and smoking status of service users.

Results
- Staff ratings on the WOS did not differ significantly after the smoking ban compared with before the ban, suggesting staff did not perceive a marked change in ward milieu.
- Comparison of staff and service users post-ban questionnaire results indicated service users felt that banning smoking was unfair and cruel for involuntary hospitalised service users and that more service users would want to be transferred to an unlocked unit. Before the ban 57% (38/67) staff and 33% (7/21) service users agreed that smoking should be banned. After the ban, 70% (37/53) and 35% (33/93) service users agreed that smoking should be banned.
- Chart reviews of service users discharged from the unit in the month before the ban and in the first month through to four months after the ban revealed no significant differences in the proportion of service users who received PRN medications, were secluded, were placed in restraints, were discharged against medical advice, or eloped.
- Of the 84 eight-hour shifts within each four-week period, the proportion of shifts in which physical aggression against others/objects did not change to a statistically significant level.

Reviewer's comments
- Nicotine gum or patches were provided to the service users, if staff felt there was a need to combat nicotine withdrawal.
- The demographic characteristics between the service users completing the questionnaires before one month and for service users completing the questionnaires for the four months after the ban are suggested by the authors to be comparable and the differences between the two groups to be non-significant. However, these calculations are not reported and there are wide variations between the two groups in relation to current smoking status, diagnosis and gender.
- Response rate: 81% (67/83) of staff completed the questionnaires before the ban and 64% (53/83) completed the questionnaires after the ban. 78% (21/27) of service users completed the questionnaires before the ban and 85% (93/109) of service users discharged during the second to the fourth months completed the questionnaires after the ban.
- Great concern for statistical comparisons made between staff and service users attitudes towards the smoking ban. Authors state that t-tests were used, which are not appropriate given the differences in sample sizes between the two comparison groups. Caution needed for interpreting these results.
- The authors conclude that smoking bans are feasible on locked wards with minimum disruption to the ward environment (although acknowledge that service users have negative feelings concerning the ban).
- The statistical methods and reporting of the results in this study are poor. The relationship between the outcome variables and the smoking ban is not clearly defined (no indication of if there were differences or increased levels of violence from smokers vs. non-smokers). The results of the study should be viewed with caution.
### Source

<table>
<thead>
<tr>
<th>Hunter &amp; Carney Love (1996)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Country:</strong> US</td>
</tr>
<tr>
<td><strong>Evidence level:</strong> 2-</td>
</tr>
</tbody>
</table>

### Study design

- Uncontrolled before and after design.
- Settings: 1,000-bed maximum-security forensic hospital.
- Population: violent incidents recorded in six dining rooms with up to 90 service users per dining room. Authors state these involved 'more than 200 patients' but sample size not reported.

### Aims of study

To examine if the principles of 'total quality management' reduce aggressive incidents at mealtimes.

### Outcome measures

- Special incident reports
- Observation of dining room practices
- Patient survey by questionnaire
- Violent incidents in dining rooms
- Weapon attacks with silverware
- Staff time spent on dinning procedures.

### Results

- Mean no. of violent mealtime incidents per day in year prior to implementation 0.53.
- Post implementation 0.32 incidents per day. A 40% reduction. Wilcoxon two sample test $z=-3.63$, $p<.001$. The change from pre to post implementation was significant.
- Use of weapon attacks using silverware was eliminated.
- 70 hours of staff time per day were saved by changes in procedures.

### Reviewer’s comments

- Confounding not accounted, for example staff and management changes.
- Survey response rate not given.
### Source

<table>
<thead>
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</tr>
</thead>
<tbody>
<tr>
<td>James et al. (1990)</td>
<td>Retrospective cohort study.</td>
<td>To assess an increase in violence on an acute psychiatric ward: study of associated factors.</td>
<td>• Staffing patterns.</td>
<td>• All violent incidents during a 15-month period were assessed retrospectively from standard reporting forms.</td>
</tr>
<tr>
<td></td>
<td>Setting: acute psychiatric ward.</td>
<td></td>
<td>• Service user demographic information.</td>
<td>• There was a 240% increase in the frequency of violence.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Number of violent incidents</td>
<td>• The proportion of permanent staff halved and that of temporary staff trebled. Other factors changed little.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• The results suggest that 39% of the variance in violent incidents was associated with changes in staffing patterns.</td>
</tr>
</tbody>
</table>

### Reviewer’s comments
- Taken from RCPsych review
<table>
<thead>
<tr>
<th>Source</th>
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</tr>
</thead>
</table>
Setting: six wards. | To assess violence and social structure on mental hospital wards. | • Factors associated with violent incidents.  
• The authors concluded that there was less violence on wards with good leadership, structured staff roles and predictable routines. |

**Reviewer’s comments**
- Taken from RCPsych review
### Lanza et al. (1994)

**Study design**: Descriptive

- One-year retrospective cohort study.
- Setting: two acute wards and four long-term wards in veterans’ hospital wards (maximum 244 patients).

**Aims of study**: To assess environmental characteristics related to patient assault.

**Outcome measures**: Factors associated with violent incidents.

**Results**: A complex analysis of aggressive incidents suggested that crowding and low autonomy were related to frequency of patient assault.

- Effect size not calculable.

**Reviewer’s comments**: Taken from RCPsych review.
### Study design

**Mistral (2002)**

**Country:** UK

**Evidence level:** 2-

**Qualitative design:**
- Grounded theory and thematic content analysis and psychometric tests.
- Settings: psychiatric high care ward with a seclusion facility.
- Population: 36 staff.

**Aims of study**
To evaluate changes in attitude following:
- Upgrading of the physical environment,
- Regular ward meetings,
- Personal alarms,
- Training in risk assessment and C&R techniques, and
- Introduction of clear rules and sanctions.

**Outcome measures**
- Semi-structured interviews with 36 nursing and medical staff.
- Attitude measure (to measure attitude of staff to service users).
- Ward atmosphere scale.
- Records of admissions, staff illness and use of seclusion.

**Results**
- Pre and post intervention phase seven months apart.
- Key themes from interviews: five positive areas of change - communication, team cohesiveness, relations with management, clarity and structure and quality of service user care.
- Five areas of continuing concern - resources and staffing levels, admittance criteria, divisions between nursing staff and medical staff, stress and safety.
- Attitude measure: significant change in 2/7 sub-scales from pre to post intervention phase.
- Skill and knowledge adequacy <0.05.
- Self-esteem in this work <0.001.
- Ward atmosphere scale: significant change in 2/10 sub-scales from pre to post intervention phase.
- Involvement (activity levels of service users)<0.002.
- Practical orientation (preparation for release from hospital) <0.05.
- Records: admissions - no significant differences in a two-year period.
- Seclusions - reduction from a mean of three times in 1996 to once a week in 1998.
- Staff illness: a reduction of 40% in staff sick leave over two years.

**Reviewer’s comments**
Five staff refused to participate, however it is not clear whether the total staff compliment is 36 or 41.
Reference is made to theoretical tradition of grounded theory without clarity on use of theory.
The interview data is presented as frequency counts of coded data with limited contextually supportive evidence.
The small size of interviews resulted in insignificant results on the sub-scales of the psychometric tests.
Respondent validation was not undertaken.
### Study Design

**Source:** Nijman et al. (1999)  
**Country:** Belgium  
**Evidence level:** 2-

- **Study design:** Correlation study (with weak control).  
- **Setting:** Two closed observation wards.  
- **Population:** 354 (212 male) were admitted to the wards during the study period.

### Aims of Study

- To examine association between ward crowding and increase in aggressive incidents.  
- To examine if enlargement of ward space result in a decline in aggressive incidents.

### Outcome Measures

- All verbal and physical aggressive acts by service users admitted to the two observation wards. Acts were recorded using the revised staff observation aggression scale (SOAS). The study period was between 1 Feb and 15 Dec 1996.  
- In the middle of the study (9 July), a courtyard was opened in one ward (ward 1). The inner courtyard was connected to two entrances to the ward, which increased the service users' opportunity to walk around freely. Ward 2 did not have a courtyard.  
- The frequency of aggression on ward 1 was compared with that on ward 2, before and after the spatial enlargement of ward 1.

### Results

- A total of 226 aggressive incidents were recorded during the study period. Aggressive episodes varied from 0 to 15, the average being 4.9 incidents per week. 18 (8%) of the incidents led to mild or moderate injury to the victims.  
- A Pearson product-moment correlation was calculated between the weekly occupancy rates of the wards and the frequency of aggression, as measured by the number of incidents per service user. A modest correlation was found between weekly occupation rates and the total number of incidents per service user ($r=0.21$, $p<0.05$).

### Reviewer's Comments

- No information is provided for the number of incidents of service user aggression in relation to ward setting. The reporting in the results section is extremely poor. Although the authors suggest that this study is a comparison of the two wards, they fail to provide any useful information that would support this suggestion.  
- The statistical analysis (Pearson product-moment correlation) is not appropriate for the analysis of this data. The suggestion by the authors that “a modest correlation was found between weekly occupation rates and the total number of incidents per service user ($r=0.21$, $p<0.05$)” is not supported by the design or the summary statistic.  
- The assumption made by the authors is that crowding is the only factor related to aggressive incidents, a position not supported by the literature.  
- The results of this study should be treated with caution.
## Source

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Palmstierna et al. 1991</td>
<td>Uncontrolled before-and-after design</td>
<td>To explore whether the number of service users in an acute care in-patient setting are related to variations in aggressive behaviour.</td>
<td>• All aggressive incidents that occurred during the 25-week study period (Oct 1985 – Mar 1986) were recorded on standardised staff reports using the staff observation and aggression scale (SOAS). • A subset of service users (observed for at least three days) who had perpetrated at least one serious incident of aggression was used to evaluate the effect of crowding on aggressive behaviour. Each service user in the subset constituted their own control.</td>
<td>• A total of 24 service users (15 schizophrenia or schizophreniform disorder and nine other disorders) fulfilled the criteria both of perpetuating at least one incident of serious aggression and of being observed for at least three days during the study period. On the days when the service users were aggressive, a mean of 63 more fellow service users were present on the ward than on the days when the service users were not aggressive. • For the 15 service users with schizophrenia or schizophreniform disorders, a mean of 0.98 service users were present on the ward than on the days when the service users were not aggressive. • There was no significant difference in the number of service users on the ward on the days when the non-schizophrenic service users were aggressive (a mean of only 0.04 more service users were present on those days).</td>
</tr>
<tr>
<td>Evidence level: 2-</td>
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## Reviewer’s comments

- The statistical methods and selection of cases for this study are questionable.
- The authors report that 47 of the 163 service users were involved in aggressive incidents, yet only 24 of these service users have been included in the analysis. This strongly suggests selection bias on the part of the authors.
- The authors indicate that 83.2% of the aggressive incidents occurred within the first eight days of admission. Given that 23 service users (79.8%) were aggressive on several occasions and that the vast majority of incidents occurred within eight days of admission, a possible alternative explanation is that a small subset of service users are aggressive immediately/soon after admission, rather than solely due to ward overcrowding.
- The level of detail reported in the study is not sufficient to support the authors’ conclusions that increased crowding increases the likelihood of aggressive behaviour.
- The results of this study could be interpreted in a number of different ways (for example, aggressive behaviour as a function of diagnosis, time after admission, the facility usually has a high occupancy rate to begin with, etc). The results of the study should be viewed with great caution.
- Included in RCPsych evidence review.
Source | Study design | Aims of study | Outcome measures | Results
--- | --- | --- | --- | ---
Palmstierna et al. (1995) | Uncontrolled before-and-after design | To evaluate the differences in the character and frequency of aggressive behaviour when an acute inpatient psychiatric unit reduced its maximum bed capacity for inpatient treatment. | • Before April 1988, the facility had 19 beds. After April 1988, the facility was reduced to 10 beds. The first part of the study took place during 25 weeks continuous weeks from the 30 Sep 1985 (i.e. before the facility was reduced to 10 beds). The second part took place during 25 weeks divided into two periods. First period = 3 Oct 1988 to 1 Jan 1989. Second period = 28 Feb to 22 May 1989. The second part was divided into two periods as staffing conditions changed during this time. The two periods were pooled together for the analysis. • All incidents of aggressive behaviour were assessed by using standardised staff reports using the staff observation aggression scale (SOAS). Only incidents scoring >5 points on the SOAS were included in the statistical analysis. • Differences in the frequency of aggressive behaviour were determined by calculating a measure of the individual aggression frequency for each service user. This measure is calculated for each service user by dividing the number of observed incidents performed by the service user with the number of observed days (i.e. number of days admitted to the ward). | • During the 25-week study in 1985-86 on the 19-bed ward, 119 incidents were reported. 55 of these were >5 points severity on the SOAS and were performed by 29 of the 163 service users. During the 25-week study in 1988-89 on the 10-bed ward, 122 incidents were reported, 58 of these were >5 points severity on the SOAS and were performed by 24 of the 150 service users. There were no differences in individual aggression frequency between the two periods of the second study time. • On the 10-bed ward, the number of attacks resulting in physical injury decreased to 22 compared to 40 incidents on the 19-bed ward. This was entirely due to a decrease in such attacks towards staff. There was no change in the number of incidents resulting in physical injury to service users. • A significant change in the pattern of provocation occurred where there were more incidents provoked by fellow service users in the smaller ward, while fewer incidents were provoked by staff. No significant difference was found when comparing the overall aggression frequency of incidents of >5 points on the SOAS between the two main periods. A four-fold significant difference was found for incidents directed towards other service users. |
Evidence level: 2+ | | | | |

Reviewer’s comments
- Authors discuss dividing the study into two periods due to a staff education and training course being completed by staff (between Jan-Feb 1989). Authors state that the results for these two periods are pooled together in the analysis. Authors do not fully explore the possibility of confounding or bias due to this educational intervention for staff.
- Authors suggest that a ward organisational policy reducing the number of in-patients and concentrating the severe psychopathology on remaining in-patient facilities could lead to a more physically secure ward for the staff at a cost of more in-patient violence. As there would seem to be few demographic differences between the service user groups in the first part compared with the second part of the study, it is uncertain why the authors suggest this.
- The study is fairly robust, although the statistical analysis and conclusions seem vague. The reduction of bed numbers seems to suggest that inter-service user violence increases, with little change in the overall number of violent incidents, although the severity of the aggressive incident is decreased.
- Included in RCPsych evidence review.
### Study design
- **Uncontrolled before-and-after design** (retrospective data collection).
- **Setting:** 145-bed acute psychiatric facility.
- **Population:** Service users at the above facility (number not reported).

### Aims of study
- To analyse violence and related incidents before and after a smoking ban in a public psychiatric hospital.

### Outcome measures
- **Retrospective analysis of incident reports.** These reports (completed by staff members) document any accident or behavioural incident occurring on the unit involving a service user. Incident reports were reviewed by a psychology student and indexed using the following categories: location of assault, assaults associated with smoking, service user to service user and service user to staff assaults, and possession of unauthorised cigarettes or matches (smoking contraband).
- **Service user acuity levels** defined as the daily assessment by a nurse reflecting the service users' physical, mental and behavioural condition. These ratings were examined as an indirect measure of the impact of smoking policy.
- **Service users' complaints** defined as formal complaints relating to the smoking submitted by service users.
- **A multiple baseline approach** consisting of two pre-smoking-ban baseline periods (baseline 1 and 2) and a three-month post-smoking-ban follow-up. The authors state that: “additional reports were reviewed for the first six months in 1992” – suggesting that the three-month post-ban group was actually a nine-month post-ban group. The study periods selected represent the cold season. The authors selected this period on the basis that any increases in violence due to the smoking ban would show maximum effect during the cold season, due to limited access to outdoor smoking areas.

### Results
- The highest frequency of assaults occurred during baseline period 1, with an average of 49 incidents per month (the authors suggest that this increase was also linked to an increase in admission during this period – no further information provided). The authors report that there was a decrease in assaults after the smoking ban, in comparison with the same time period of the previous year (previous years data not provided, only summary statistic). The authors also report that a second comparison of the combined baseline periods showed a decrease in the monthly incidents in comparison to the average assaults for a nine-month period after the smoking ban was introduced (no information in the report on results for the nine-month period).
- **Descriptive data** are provided for the number of assaults and smoking behaviour. Three assaults were reported during baseline 2. Four incidents were reported for the first three months after the smoking ban. The authors state that “during the nine-month sampling period of the smoking ban, when approximately 630 service users were admitted”, there were only eight smoking related assaults.
- Reported that a total of 25 reports of possession of contraband occurred in the three months before the smoking ban, in comparison to 36 incidents after the smoking ban. The authors suggest that for the same time period one year later, only 12 incidents were documented (no previous mention of a 12 month follow-up period).
- The average acuity level for the pre-smoking ban period (three-months) was significantly different to the average acuity level for the first nine months after the smoking ban.
- **Service user complaint data** indicated that for the first six months of the ban, there were 15 complaints. In the same time period in subsequent year there were four complaints.

### Reviewer’s comments
- There is no demographic information presented for the study population.
- The reported results of the study are difficult to interpret. The authors have reported that there was a decrease in assaults for the first three months after the smoking ban in comparison to the same time period in the previous year, however, the data for the previous year are not provided. The authors suggest in the results that the average of the nine-month period for the post-ban group was used in the comparison to the baseline groups. This analysis was not suggested in the methods section.
- The quality of reporting for the results section of this study is extremely poor. The authors neglect to introduce data to support their conclusions that there is no empirical evidence to suggest that the smoking ban is linked with an overall increase in overall hospital assault rate. The study suffers from a range of study biases. The results should be treated with caution.
Velasco et al. (1996)

Country: US  
Evidence level: 2-

To investigate incidents of violence and medication use after the implementation of a smoking ban.

- Nursing staff prospectively documented the following data: daily census, number of security calls, applications of seclusion and restraint, verbal assaults, and physical assaults per shift, number of administrations of PRN medications for anxiety, number of service users received nicotine gum or patches, and number of discharges against medical advice per day.

- Data from the present study were compared to the results of the previous investigation (for example, before ban vs. immediately after vs. two years after). Statistically significant differences were observed for three variables: number of verbal assaults, number of applications of soft restraints and number of service users who received nicotine therapy.

- The mean number of verbal assaults during the period immediately after implementation of the ban in 1991 was significantly higher than in the period before implementation. No difference found between number of verbal assaults before implementation and in two-year follow-up group. The authors suggest this finding is due to greater anxiety on the part of service users due to sudden cigarette deprivation.

- Soft restraints were applied significantly more often during the two-year follow-up period than during the period before implementation; no difference was found in the use of soft restraints before and immediately after the ban. The authors are unable to suggest a possible explanation for this result.

- Consumption of replacement nicotine was significantly higher both during the period immediately after and during the two-year follow-up period. The authors suggest that this is to be expected.

Reviewer’s comments

- Study is a follow-up study to a previous investigation of a smoking ban within the facility.
- Procedures for the collection of data not clear. Uncertain how the behavioural data were actually recorded (for example, standardised response form, service user records, etc).
- The authors suggest that the limitations to the study are that there is no control group and that the results may not be generalisable to service users not in inner-city (USA) teaching hospitals.
- The study has several methodological flaws. It is uncertain how the data was collected and the statistical analysis used in the article may not be appropriate given the differences in sample sizes between the groups. The significant differences described in this study seem to add little value to the understanding of violence in in-patient psychiatric settings in the context of smoking bans. The results of this study should be viewed with caution.
### Waite et al. (1992)

**Country:** US  
**Evidence level:** 2+

<table>
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</table>
|                 | Interrupted time-series.             | To evaluate the effects of a ban on the music television channel (MTV) on the television in a maximum-security facility. | • Overt aggression scale (OAS) data from an ongoing hospital wide aggression monitoring project. Two types of summary scores were used. First, weekly hospital frequencies of aggressive incidents for each of the four categories of the OAS. Secondly, weekly hospital mean severity scores of aggressive incidents based on standard objective staff ratings and interventions used.  
• The OAS data was collected for all service users during the 55-week study period. The 33-week period before removal of MTV was compared to the 22-weeks after the removal. Interrupted time series analysis was used to control for potential auto-correlation of aggression scores. | • The time-series analysis revealed that there was a significant reduction (37%) in aggressive behaviour following the removal of MTV. The frequency of incidents of verbal aggression (32.4%), physical aggression against others (47.5%) and physical aggression against objects (51.7%) were all reduced. There was no significant change in the frequency of aggression against self. No significant change in the severity of aggression in any of the four categories before and after removal of MTV.  
• The authors identify and explore potential sources of bias. An alternative explanation of the findings was suggested to be an unrelated environmental or historical change in the hospital. The authors report that they thoroughly reviewed possible environmental changes (for example, clinical policies, staffing patterns, or prescribing practices or systematic seasonal variations) but no compelling alternative explanation. Other confounding factors (for example, staff reporting or differences between pre- and post-intervention groups) were also identified, but were suggested to have no impact on the findings. |

**Reviewer’s comments**

- The study is well designed and executed. The authors have explored possible sources of bias and confounding and have provided a high amount of detail of the results of these analyses.  
- The authors suggest that the removal of the MTV channel was effective in reducing the frequency of aggressive behaviours (which is supported by the analysis).  
- The design and reporting of the study would indicate results are reliable and useful.
I Service user perspectives on the environment

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Clark (1997)</td>
<td>Postal survey of medical staff, and inspection of interview rooms.</td>
<td>To ascertain the number of violent incidents experienced by medical staff in psychiatric services and to examine the safety of interview rooms used by medical staff.</td>
<td>• Questionnaire - demographic details of staff and their relationship to violent incidents, details of staff training in handling violence, most disturbing violent incident and risk assessment procedure.</td>
<td>• Response rate 81% N=34 (17 male 17 female; 33 white one black; grades range from consultant to house officer).</td>
</tr>
<tr>
<td>Country: UK</td>
<td>Settings: general adult and geriatric psychiatric services, including clinics as well as in-patients. Population: 34 medical staff in city.</td>
<td></td>
<td>• Inspection of interview rooms based on previously stated guidelines.</td>
<td>• Total no. of assaults and threats increases with age of doctor.</td>
</tr>
<tr>
<td>Evidence level: 2-</td>
<td></td>
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<td></td>
<td>• &lt;29yrs=15, 30-39yrs=83, &gt;40yrs=254</td>
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<td>• Restraint had been taught to four staff, breakaway techniques taught to six in the last six months and 12 knew the correct reporting procedure.</td>
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<td>• 41 rooms were inspected of which 32 were for moderate risk and nine were high-risk.</td>
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<td>• In the moderate risk rooms, 21 didn’t have alarms; 25 didn’t have safety glass; in 17 the interviewer’s chair was not nearest the door; in 27 the exit was not clear; and in 26 the door did not open outward.</td>
</tr>
<tr>
<td></td>
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<td></td>
<td>• In the high-risk rooms, nine didn’t have safety glass; in seven the interviewer’s chair was not nearest the door; in four the exit was not clear; and in six the door did not open outward.</td>
</tr>
</tbody>
</table>

Reviewer’s comments
• Response rate good although sample small for this type of study.
• Study sample and setting not representative of all doctors and settings in England and Wales.
• Low level of incidents reported might not reflect other settings, which have higher levels of incidents.
### Source: Johnson (1997)

**Country:** Canada  
**Evidence level:** 2-

<table>
<thead>
<tr>
<th>Study design</th>
<th>Aims of study</th>
<th>Outcome measures</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Qualitative design using semi-structured interviews</td>
<td>To increase the understanding of the experiences of individuals with thought disorders, which precede incidents of aggression.</td>
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</tr>
</tbody>
</table>
- Up to four interviews per service user to establish baseline data about participant’s usual experiences of stress and upset; additional interviews followed aggressive incidents.  
- Questions structured to establish thoughts, experiences, feelings, that precede an aggressive incident. |  
- Participants: 11 male 1 female, all white, mostly between 20-40 years old with schizophrenia, schizo-affective disorder and one participant with a bipolar disorder.  
- Taped transcripts were analysed with content analysis. Three key themes emerged:  
  - External Environment-lack of space, freedom and outdoors. Relationships with others including staff and family. Restrictive hospital policies on privileges.  
  - Paradox of powerlessness vs. powerful. Powerlessness leading to aggressive incident and power of responding to this with aggression.  
  - Known preventative strategies ineffective or not used, for example, physical activity or talking to someone. |

**Population:** 12 psychiatric in-patients with thought disorders, more than one admission and a history of aggressive behaviour. Service users with organic brain disease excluded.

**Reviewer’s comments**

Selection of sample or response rate not clearly stated.  
Respondent validation not stated.  
Small homogenous sample.
5.2 Prediction: antecedents, warning signs and risk assessment

I Antecedents

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<tr>
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</table>
| Agarwal & Roberts (1996)    | Two-year retrospective cohort study.| To determine the precursors of violence and characteristics found in service users who have been restrained and/or secluded. | Hospital incident reports. | • 1991: 70 aggressive incidents (21 service users - six single, 15 repeat).  
• 1992: 65 aggressive incidents (17 service users - 10 single, seven repeat).  
• 1992: mean age of violent service user rose from 31 to 38 yrs; more violent service users over 50 (p<0.025) and criminally detained (p<0.05); significant increase in attacks on service users (p<0.0001); staff-service user interaction and service user unhappiness noted within more incidents. 92% of verbally abuse service users, who required staff intervention went on to become either physically aggressive or physically violent. 88% of those displaying aggression became violent. 17-21% were psychotic prior to incident.  
• History of violence, unhappiness or deteriorating mental health preceded 50% of attacks.  
• Staff were four times more likely to be attacked than service users. |
| Country: UK                 |                                     | To study changes in violence in relation to change in ward status.            |                    |                                                                         |
| Evidence level: 2-          |                                     |                                                                               |                    |                                                                         |
|                             | Setting: change from locked secure unit to interim secure unit.               |                                                                               |                    |                                                                         |
|                             | Population: 135 adult in-patient psychiatric service users.                  |                                                                               |                    |                                                                         |

Reviewer’s comments

- Author comments that service users retained under civil section generally more aggressive than criminal detainees.
- Verbal abuse is a good predictor, but physical aggression is better.
- Retrospective study - needs to be treated with caution.
### Source: Haber LC et al. (1997)
- **Country:** USA
- **Evidence level:** 2-

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<tbody>
<tr>
<td>Survey (postal and hand delivered). Setting: veterans' medical centre. Population: RNs and NAs (number not specified).</td>
<td>To ascertain agreement between RNs and NAs about which antecedents require verbal intervention and which defensive and which ‘acting out’ behaviours require chemical or physical (leather straps) intervention.</td>
<td>Three scales were created and piloted with RNs and NAs using Cronbach alpha to establish internal validity. The first contained lists of antecedents, the second lists of ‘acting out’ behaviours, and the third list defensive behaviours. Nurses were asked to indicate whether they would give verbal, chemical or physical interventions.</td>
<td>RNs and NAs picked similar antecedents for verbal interventions, but NAs selected more defensive (p=0.01) and more acting out behaviours (p=0.03) for physical intervention. However, this is less than one behaviour on the defensive scale and just over one behaviour on the acting out scale.</td>
</tr>
</tbody>
</table>

**Reviewer’s comments**
- Authors argued that as results are similar to earlier study (Fagan-Pryor et al. 1994) suggesting that nurses respond to seriousness of behaviour.
- Both RNs and NAs receive violence management training (eight hours initial, two hours annual - classroom-based).
- Small sample (84 RNs and NAs), mostly white females. Service user population and training may also limit generalisability of findings.
### Study design

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<tr>
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<tbody>
<tr>
<td>Hallenstinsen et al. (1998)</td>
<td>Six-month retrospective cohort.</td>
<td>To test whether the extended version of the staff observation aggression scale (SOAS-E) has sufficient warning signal categories.</td>
<td>Warning signals,</td>
<td>- 263 incidents of aggressive behaviour were recorded.</td>
</tr>
<tr>
<td>Country: Norway</td>
<td>Setting: two secure units (24 beds), 1 individual.</td>
<td></td>
<td></td>
<td>- Authors noted that most subcategories were observed (added 11 new subcategories) and argue that they were exhaustive in so far as the 'other signals' category had few entries.</td>
</tr>
<tr>
<td>Evidence level: 2-</td>
<td>Population: psychiatric service users (includes learning disability) - number not reported.</td>
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<td></td>
<td>- Verbal expression of anger 50-78.3%.</td>
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<td></td>
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<td></td>
<td></td>
<td>- Bodily expression of anger 41.4-71.1%.</td>
</tr>
</tbody>
</table>

### Reviewer's comments

Authors comment that these results are not generalisable to other settings. The tool is easy to use and quick. However, this study does not test the predictive validity of these warning signals in that it does not give any information about how often these signals were displayed by service users who did not become violent. Further extensive testing is necessary.
### Lee et al. (1989)

**Country:** USA  
**Evidence level:** 2-

**Study design:** Retrospective comparative cohort study.  
**Setting:** 49 bed psychiatric unit.  
**Population:** 150 psychiatric in-patients (75 aggressive + 75 non-aggressive controls).

**Aims of study:** To determine whether pre-incident behaviour correlated with type of incident.

**Outcome measures:** Pre-incident behaviour taken from progress reports. Split into five groups:

- **Group A**
  - hyperactive, loud, verbally abusive, angry, hostile.

- **Group B**
  - anxious, apprehensive, depressed.

- **Group C**
  - withdrawn, isolated, lethargic, confused.

- **Group D**
  - hallucinating, delusional, disorganised, bizarre.

- **Group E**
  - immature, childish, playful.

**Results:**
- Pre-incident behaviour significantly correlated with type of incident ($p<0.001$).
- Most service users who committed physical violence exhibited group A antecedents.
- Suicide attempts were related to group B antecedents.
- Medical emergency and death was related to group C.

**Other risk factors:**
- A significant correlation was found between types of incidents and pre-incident behaviour ($p<0.001$).
- The overall rate of incidents did not differ significantly between male and female service users.
- Most incidents during first week of admission.
- Service users with schizophrenia were more prone to be involved in assault, and destructive behaviour - but an equal number of service users with a diagnosis of schizophrenia were found in violent and control groups.

**Reviewer’s comments:**
Authors comment that antecedents provide important pointers for management strategies and that careful monitoring could predict incidents in groups A and B.

Limitations to the study design - group E were excluded from analysis, insufficient results were shown for group D.
Linaker & Busch-Iverson (1995)

Evidence level: 2-

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<tbody>
<tr>
<td></td>
<td>Cohort study.</td>
<td>To assess predictors of imminent violence in psychiatric in-service users.</td>
<td>Antecedents.</td>
<td>In a 24-hour period, 48 violent episodes requiring restraint were studied, together with 93 control days.</td>
</tr>
<tr>
<td></td>
<td>Setting: maximum-security unit.</td>
<td></td>
<td>Case records (recording violent episodes).</td>
<td>Six behaviours were more common the day before violence: confusion, irritability, boisterousness, physical threats, verbal threats and attacks on objects.</td>
</tr>
<tr>
<td></td>
<td>Population: 86 service users (committed for up to three days).</td>
<td></td>
<td></td>
<td>The proportion of such days without any of the six behaviours present was 14% compared with 80% for the controls.</td>
</tr>
</tbody>
</table>

Reviewer’s comments
- Taken from RCPsych review.
### Study design

**Cross-sectional.**

**Setting:** three inner city psychiatric hospitals.

**Population:** 275 in-patients, day patients and out patients.

### Aims of study

To identify, classify and measure relative frequency of events preceding violent incidents.

### Outcome measures

Antecedents (recorded in untoward incident form).

### Results

- 1,000 observations of antecedents.

  The following antecedents were identified:

  **Group A**
  - generally agitated or disturbed
  - affected by alcohol or illicit drugs
  - sexually frustrated
  - misinterpretation of communication
  - engaged in self-harm
  - engaged in absconding
  - engaged in arson.

  **Group B**
  - admissions, transfers and discharges
  - decisions about Mental Health Act of Ward of Court
  - restriction (clinical and legal)
  - benefits and allowances
  - medication
  - physical restraint.

  **Group C**
  - provocation by other service users, relatives or visitors
  - staff led meeting with service user.

  **Three incidents contributed to >10% of incidents:**
  - Service user agitated or disturbed, restrictions, and provocation by others.
  - No significant relationship between the category of antecedent and severity of incident was found. Schizophrenic psychosis was associated with severity.
  - Most frequent assailants tended to have same antecedents.
  - A small group of individuals - 8% - were found to be responsible for >40% of incidents.

### Reviewer’s comments:

This study set out to measure the frequency of events preceding violent incidents, and produced a good database of events and how to modify data collection to make this easier. This led to positive changes in clinical practice. It does not offer information of the predictive validity of these antecedents.
<table>
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</table>
| Shepherd & Lavender (1999) | Cross-sectional survey within prospective study. Setting: 13 wards in London NHS psychiatric hospital. Population: adult in-patient psychiatric (includes high and low security, elderly and substance abuse settings). This included 72 patients/130 aggressive incidents and 115 victims/130 aggressive incidents. | To increase understanding of the violent incident, its antecedents, and consequences (how incident was managed and which staff were involved). A function analysis framework was used to evaluate: • hospital incident forms of violent incidents  
  • staff interviews discussing:  
    a) nature of incident  
    b) antecedents  
    c) consequences.  
  A four-point severity scale (after Yudofsky et al.) was used to grade incident severity. Inter-rater reliability was checked (more than 80% agreement). | • No significant difference between secure and admission for rehabilitation or continuing care. However, significant difference between number of violent incidents (no p value given).  
  • One admission unit reported significantly more incidents than the other (p<0.01).  
  • Low secure unit reported more incidents than medium secure unit (p<0.001).  
  • Mean age of assailant 38yrs.  
  • 88.9% of assailants had schizophrenic psychosis.  
  • 57% victims service users (staff 40.9%).  
  • 72% victims male.  
  • 60% antecedents external p<0.05 (25.9% service user to service user interaction).  
  • 40% internal (delusions 6.9%, hearing voices 1.7%, unspecified 29.3%, unsubstantiated 1.7%).  
  • 65% incidents managed with (C&R and or PRN) p<0.001.  
  • 30.7% managed by verbal intervention.  
  • Counselling (91%= asserting staff authority, 8.7% service user-centred). |

**Reviewer’s comments**
- Author notes that study is limited by prospective design and lack of reliability and validity testing of interview content. Also notes possible under-reporting of incidents.
- Authors stress that findings indicate that service users and males are most at risk of attack by services users.
- These results are not generalisable and need to be treated with caution.
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<tr>
<td>Sheridan et al. (1990) Country: USA Evidence level: 2-</td>
<td>Qualitative (staff and service users interviews) over 12 months. Setting/population: 73 service users placed in mechanical restraints and nursing staff at veterans' medical centre (number not stated).</td>
<td>To determine: service user demographic characteristics; antecedents prior to restraint; interventions used prior to restraint; service user perceptions of restraint experience.</td>
<td>Semi-structured interviews (service users within 72 hours of release from restraints).</td>
<td>Main service user demographic characteristics 73% schizophrenia; 66% history of aggression. Antecedents (length of time before incident not stated) - taken from staff interviews and medical records 75% anxious, 53% hostile, 51% loud, cursed frequently, 49% pacing, 30% delusional (researchers queried this - 16%). Types of events leading to restraint (staff and service user interviews) 63% external events (most common - conflict with staff), 26% internal and external events. Feelings prior to restraint (service user interviews) given in numbers angry (12), upset (6), depressed (5), nervous (5), frustrated (2), good (2), scared (2), guilty (1), worried (1). Interventions prior to restraint talk down (60%), seclusion (36%), individual therapy (25%), RT (31%). Service user responses to restraint 41% positive, 51% negative, 8% neither (attitudes made no difference to subsequent levels of restraint). Service user suggestions for preventing restraint 24% better communication with staff, 24% discharge, (others - stop drinking, different medication, take medication, more respect, better attitude on their part).</td>
</tr>
</tbody>
</table>

Reviewer’s comments
- Author notes that results cannot be generalised due to small sample.
- Main focus of article is experience associated with and circumstance/antecedents of mechanical restraint.
- Included in RCPsych evidence review.
<table>
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</table>
| Whittington & Patterson (1996) | Country: UK Evidence level: 2-                                             | Prospective cohort (with control) and retrospective reporting.                  | - To ascertain factors associated with verbal and non-verbal pre-assault behaviour.  
- To consider whether these behaviours are exhibited other than prior to violent incidents.  
- To examine relationship between pre-assault behaviour and injury, dangerousness and service user characteristics. | - Assault information form completed by staff within 24-hours of incident recorded:  
  a) verbal and non-verbal behaviours prior to assault (physical contact with staff perception of hostile intent) (three days before and five minutes) Inter-rater reliability was attained prior to study.  
  b) verbal and non-verbal behaviours when no assault (three days before and five minutes).  
  c) Staff perceptions of dangerousness were assessed using a visual analogue scale ranging from 0-10.  
- Assault information form showed good inter-rater reliability (74% overall, 100% in certain areas).  
- Most service users at least one sign five minutes before assault.  
- Best predictor five minutes before = verbal abuse (66.6%) but also found in control group (statistically significance not stated).  
- Increase in disturbance of assailters compared to control in three days prior but not statistically significant (NS), increased anger and aggression statistically significant difference p=0.0001 (verbal abuse p=0.05, threatening gestures/stance p=0.01, abnormal activity level p=0.05).  
- No significant difference according to clinical, demographic or characteristics in assaults.  
- Staff perceptions of dangerousness indicate a negative correlation between age and assault, but age best predictor of injury (under 60yrs).  
- The mean dangerousness score ascribed to two service users with personality disorder = 9.3 (average 4.3). Both violent incidents resulted in injury.  
- Anger levels five minutes before attack correlated significantly with perceived danger p=0.02. |

Reviewer’s comments
- Authors comment that no perfect predictor, individuals vary.  
- Significant behaviours manifest over three days without assault - authors suggest that this gives an opportunity for intervention and that staff need to be aware of all triggers.  
- Controls reasonably similar to aggressors (sex, ward, age, diagnosis, legal status, medication (y/n)) Comparability of baseline characteristics described.  
- Small sample size, author acknowledges results may be difficult to generalise.
### Source

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<tbody>
<tr>
<td>Whittington &amp; Wykes (1994)</td>
<td>Cross-sectional study. Setting: 13 (mainly) acute wards.</td>
<td>To assess whether certain staff are prone to being assaulted in psychiatric hospitals.</td>
<td>• Precursors to violence incidents.</td>
<td>• Number of violent incidents=100.</td>
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<td></td>
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<td></td>
<td>• Interviews with 29 nurses involved with 63 incidents (17 patients) were obtained within 72 hours. They were compared with those of 136 nurses not assaulted.</td>
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<td>• Of many variables examined, only two – youth and inexperience – were significant.</td>
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**Reviewer’s comments**
- Taken from RCPsych review.
<table>
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<td>Setting: 13 (mainly) acute wards.</td>
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<td>Interviews with 29 nurses involved with 63 incidents (17 patients) were obtained within 72 hours.</td>
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<td>Precursors were noted as present in 54 cases; approach or physical contact (for example, to prevent absconding or harm); frustration; request for an activity; negative verbal statements.</td>
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</table>

Reviewer’s comments
- Taken from RCPsych review.
### II Clinical judgement

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</table>
• Actual violence. | Research staff observed and recorded every interview with patients over four months.  
Two index and two comparison groups (partially overlapping) were drawn from 178 admissions.  
One index group was composed of all patients rated as potentially highly assaultive (n=32). Of these, 75% were later violent in the ward.  
The comparison group (n=32) was drawn at random from 146 patients regarded as not highly assaultive: 13% in fact became violent.  
The second index group was composed of all 32 patients involuntarily admitted because judged dangerous to others. Of these, 56% were violent later.  
All other patients (n=40), committed for reasons other than danger, constituted the second comparison group; 42% were violent later (difference not significant). |

**Reviewer’s comments**
- The authors comment on the choice of sampling strategy, comparison groups and length of follow-up period (72 hours may be too short).
- Taken from RCPsych review.
### Haim et al. (2002)

**Country:** Israel  
**Evidence level:** 2-


- **Aims of study:** To test the predictive validity and similarity of psychiatrists’ and psychiatric nurses’ predictions of violence.

- **Outcome measures:**
  - Violence (at 24 hours, 10 days, one month, three months hospitalisation).
  - Criterion used to predict violence.

- **Results:** Total predictive value = 82% for psychiatrists (sensitivity = 37%, specificity = 88%, positive predictive value = 30%, negative predictive value = 91%) and 84% for psychiatric nurses (sensitivity = 33%, specificity = 90%, positive predictive value = 30%, negative predictive value = 92%). Two groups coincided for 83% of service users (violent = 73%, non-violent = 85%). Both groups emphasised previous knowledge of service user, threats of violence, verbal aggression, feeling threatened, and property damage as the most important criteria for determining future violence, and ethnicity and gender as the least important.

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**Reviewer's comments**

There were fewer nurses than psychiatrists. It is unclear if the predictive validity would have been as high in a larger group. Authors note that violent incidents were assessed from nursing charts, leading to possible reporting bias. Possible that not all incidents were recorded. Also could have missed some incidents because follow-up stopped at three months.
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<tbody>
<tr>
<td>Hoptman et al. (1999)</td>
<td>Three-month prospective cohort study.</td>
<td>To identify characteristics of assaultive service users and test predictive validity of clinicians’ assessments.</td>
<td>Violence = hit or injure someone (modified version of scale for aggressive and agitated behaviours). Substance abuse (mixture of DSM-III-R and chart review). Psychosis (brief psychiatric rating scale BPRS). Ward behaviour (nurses’ observation scale for in-patient evaluation NOSIE). Criminal history (official records). Childhood experiences of victimisation (conflict tactics scales). Family rearing environment.</td>
<td>Two data sets were collected - one based on clinical prediction and the other on actual violence. Clinicians were significantly more accurate than chance (p=0.001 sensitivity=54% specificity 79%). Factors associated with clinical prediction are listed. Clinicians over-predicted assaultive behaviour for service users who were members of racial minorities. They also failed to note the predictive value of dual diagnosis (p=0.03). Service users who became assaultive were younger (p=0.02), less educated (p=0.08) and likely to be transferred from a civil hospital (p=0.003).</td>
</tr>
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</table>

**Reviewer’s comments**

57.4% of population were African Americans; 35% were Caucasians. Authors note the predictive validity of clinicians is better in this study than in previous studies but note that some variables were mis-categorised by clinicians, suggesting that there is room for improvement and should be supplemented by other approaches.
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<tbody>
<tr>
<td>Janofsky et al. (1988)</td>
<td>Cohort study</td>
<td>To assess psychiatrists’ accuracy in predicting violent behaviour on an in-patient unit.</td>
<td>• Likelihood of violence.</td>
<td>• During an eight-week period, psychiatrists made clinical predictions as to whether service users would show violent or threatening behaviour during that time.</td>
</tr>
<tr>
<td></td>
<td>Setting: an acute ward.</td>
<td></td>
<td>• Actual violence.</td>
<td>• Only one of the seven violent service users was predicted, but 39 of the remaining 40 were correctly predicted.</td>
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<tr>
<td></td>
<td>Population: 47/54 service users who stayed for seven days.</td>
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<td></td>
<td>• Prediction of threatening behaviour was better (seven out of 17 service users) with only three wrongly predicted of 30 patients who did not threaten.</td>
</tr>
</tbody>
</table>

**Reviewer’s comments**
- The problems of predicting with such small numbers are discussed.
- Taken from RCPsych review.
<table>
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<tbody>
<tr>
<td>Kirk (1989)</td>
<td>Cohort study. Setting: a locked 11-bed ward. Population: 86 service users</td>
<td>To assess prediction of violent behaviour during short-term civil commitment.</td>
<td>• Likelihood of violence.</td>
<td>• 37 service users were regarded as being a danger to others. The other</td>
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<td></td>
<td>(committed for up to three days).</td>
<td></td>
<td>• Actual violence.</td>
<td>31 were admitted on other grounds, for example, danger to self or</td>
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<td>unable to care for self.</td>
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<td>• There was no difference between the two groups in the violence</td>
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<td>shown during the period of detention.</td>
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Reviewer’s comments
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<tbody>
<tr>
<td>McNiel et al. (1991)</td>
<td>11-month prospective cohort study.</td>
<td>To assess:</td>
<td></td>
<td>Moderate correlation of predictions by nurses and physicians (p&lt;0.00001). There was notable over prediction by nurses and physicians, but when milder forms of aggressive behaviour were considered there was not significant over prediction.</td>
</tr>
<tr>
<td>Country: USA</td>
<td>Setting: Locked short-term psychiatric unit.</td>
<td>• whether nurses and physicians make similar predictions of short-term violence (seven days) on admission</td>
<td>• Clinical data.</td>
<td></td>
</tr>
<tr>
<td>Evidence level: 2+</td>
<td>Population: 149 service users (15-90 years).</td>
<td>• the predictive accuracy of clinicians' predictions</td>
<td>• Interview with service user.</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>• the relationship of clinicians' predictions to milder forms of violence.</td>
<td>• Review of medical records.</td>
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</table>

**Reviewer's comments**

Aggressive behaviour was recorded using the overt aggression scale (OAS)
The authors postulate that the large number of false positive predictions may be caused by staff interventions that prevented assaultive behaviour.

Included in RCPsych evidence review.
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</table>
| McNiel et al. (1995) | Prospective cohort    | To identify characteristics of service users whom clinicians accurately predicted high or low risk of attacking someone in first week of admission. | • Pre-admission violent behaviour.  
• Demographic information.  
• Clinical variables. | Clinical judgements emphasising gender and race/ethnicity tended to be false positives (overestimated in males and nonwhites, underestimated in females).  
Clinicians’ positive predictions were accurate in less the 30% of case. Negative predictive power was 92%. Total predictive power was 69%.  
Sensitivity in high-risk group who later became violent =67%.  
Specificity in low risk group who didn’t become violent =69%.  
Diagnosis of schizophrenia, mania or organic psychotic condition more likely to be predicted true positive rather than true negative or false positive.  
Service users with low levels of hostile-suspiciousness and high levels of anxious-depression were more likely to be correctly classified as low risk. However true positive, true negatives or false negatives did not differ in mental status.  
Service users with a recent history of violence were more likely to be classified as high risk, but rate of pre-admission violence did not differ between true positive and false positive groups. |
|                     | cohort study.         |                                                                               |                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                  |
|                     | Setting:              |                                                                               |                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                  |
|                     | locked university-     |                                                                               |                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                  |
|                     | based short-term      |                                                                               |                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                  |
|                     | psychiatric unit.     |                                                                               |                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                  |
|                     | Population:           |                                                                               |                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                  |
|                     | 226 psychiatric       |                                                                               |                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                  |
|                     | in-patients.          |                                                                               |                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                  |
|                     |                      |                                                                               |                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                  |

**Reviewer’s comments**

Authors argue that although clinicians often assess risk accurately, awareness of systematic errors will help improve prediction.  
In an editorial review of this paper it was pointed out that clinicians were found to be accurate only in negative predictions.  
Authors argue that variables need to be considered together, for instance overt hostility is a better predictor in an acutely ill service user with organic psychotic disorder than a service user with schizophrenia. History of violence should not be used without considering other correlates.  
Staff interventions may have increased the number of false positives.  
Included in RCPsych evidence review.
### McNiel et al. (1998)

**Country:** USA  
**Evidence level:** 2+

<table>
<thead>
<tr>
<th>Study design</th>
<th>Aims of study</th>
<th>Outcome measures</th>
<th>Results</th>
</tr>
</thead>
</table>
| Prospective cohort study (no control). | To assess the extent to which clinician confidence in the accuracy of short-term risk of violence prediction at admission correlates with actual in-patient behaviour in the first seven days of hospitalisation. | - Likelihood of violence (0-100).  
- Confidence in prediction (0-100). | - Violent behaviour was rating using the overt aggression scale (OAS).  
- Clinicians’ estimates of violent risk had a substantial relationship to subsequent service user violence (75% high risk became violence, 98% low risk did not become violent).  
- Correlation between prediction and physical violence for all in-patients $p=0.3068$ (The Hosmer-Lemeshow goodness of fit test).  
- For high confidence of prediction (100-75) there is a strong correlation between prediction and violence. ($p=0.0000$).  
- For medium confidence of prediction (74-51) there is a good correlation between prediction and violence. ($p=0.0373$).  
- For low confidence of prediction (50-0) there is little correlation between prediction and violence ($p=0.6480$). |

**Setting:** university-based short-term locked in-patient psychiatric unit.  
**Population:** 317 psychiatric in-patients; 78 clinicians.

Reviewer’s comments  
The authors concluded the clinician confidence is an important moderator of the predictive validity of their risk assessments of violence in the short-term.  
The large number of clinicians involved (78) enhances generalisability (each assessed a mean of 4.1 service users).  
**Authors conclude that actuarial tools might enhance clinical judgement, especially where clinicians have low confidence in their assessment.**
### McNiel (2000)

**Country:** USA  
**Evidence level:** 2-

<table>
<thead>
<tr>
<th>Source</th>
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</tr>
</thead>
</table>
| McNiel (2000) | Retrospective single sample cohort study | To assess the predictive validity of inter-rater agreement between clinicians in violence risk assessment for first week of admission. | • Demographic data.  
• Violence prediction scale (described in McNiel 1991).  
Nurse and physician rated service users separately.  
Rate of violent behaviour during first week of admission rated using OAS. | 110 physicians made ratings; 47 nurses made ratings.  
**Predictive accuracy using logical regression analysis**  
• Shows that predictive validity of physician ratings is moderated by the extent of agreement between physician and nurse.  
**Traditional measures of predictive accuracy**  
Concordant cases of physician and nurse estimates of high and low risk showed the following:  
• sensitivity 0.23, specificity 0.98, positive predictive validity 0.65. Negative predictive validity 0.91  
• total predictive power 0.90.  
For discordance cases, physician estimates of high and low risk showed the following:  
• sensitivity 0.56, specificity 0.46, positive predictive validity 0.29, negative predictive validity 0.73  
• total predictive power 0.43.  
• Based on physician ratings when concordant high risk were significantly more likely to become violent (p<0.05), low risk were less likely to become violent (p<0.02).  
• Based on nurse ratings, when concordant high risk were significantly more likely to become violent (p<0.03), low risk were less likely to become violent (p<0.01).  
**ROC analysis of predictive accuracy**  
• For concordant cases: physicians AUC=0.7236, nurses AUC=0.6994.  
• For discordance cases: physicians AUC=0.4939, nurses AUC=0.5244. |

**Reviewer’s comments**  
Authors note that AUCs were significantly higher for concordant cases than discordant cases (physicians p<0.01, nurses p<0.05).  
Authors argue that ratings of violence using ROC analysis is similar for concordant clinician analysis to results with actuarial tools and structured clinical judgement.  
Authors suggest that this result justifies legal mandates that civil commitment is justified by more than one professional evaluation of dangerousness.  
Author notes that service users who were deemed high risk will have received additional interventions to reduce this risk, which will effect the apparent predictive validity of the assessments.
### Reviewer's comments
Authors used only information available at admission. Therefore, only crude diagnoses were made.
Aggression was rated using SOAS-R. Authors suggest that unaided clinical judgement may be fairly accurate in predicting short-term violence during acute admission, even if recidivism after discharge is more difficult to predict. They note that archival factors, except history of involuntary admission, were not significant predictors of short-term in-patient violence.
Authors note that study does not specify how staff were able to predict aggression above chance. It is probable that the high rate of readmission of these service users meant that staff knew them and that there was bias in the recording of minor incidents of aggression because staff believed that these service users were aggressive.
<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Rabinowitz &amp; Garelik-Wyler (1999)</td>
<td>Seven-month prospective cohort study, Setting: emergency room in public psychiatric hospital, Population: 99/150 admissions 13 psychiatric residents.</td>
<td>To examine the accuracy of predictions of violence and to identify risk factors for in-patient violence.</td>
<td>• Clinicians’ confidence (five-point scale - with verbal explanation of risk management).</td>
<td>• Service users with 50% or greater rating were rated as predicted as violent.</td>
</tr>
<tr>
<td>Country: Israel, Evidence level: 2+</td>
<td></td>
<td></td>
<td>• Demographic information.</td>
<td>• Service users with 25% or no chance were rated as non-violent.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Clinical data.</td>
<td>• Clinical predictions had a positive predictive value of 41%, a negative predictive value of 76.9% (specificity=63.4%, sensitivity=57.1%) Total predictive value=61%. Predictions were nearly significantly better than chance.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Historical data. violence = physical aggression towards others (measured by staff record).</td>
<td>• History of violence was a significant predictor; other variables were not significant.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Confidence does not appear to be related to accuracy.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Service users with schizophrenia were found to be least violent, but all groups were predicted to be roughly equally violent.</td>
</tr>
</tbody>
</table>

**Reviewer’s comments**
Authors comments that risk management strategies may have prevented some incidents of violence and that not all incidents of violence may have been reported, although they argue that at least one incident per service user is likely to have been noted over this time period.
<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Werner et al.</td>
<td>Cohort study.</td>
<td>To assess reliability, accuracy and decision-making strategy in clinical</td>
<td>• Likelihood of violence (clinician reviewed summaries - 18 items from the BPRS plus</td>
<td>• Clinicians (n=30) reviewed summaries (18 items from the BPRS plus whether violence was a</td>
</tr>
<tr>
<td>(1983)</td>
<td>Setting: an acute unit.</td>
<td>predictions of imminent dangerousness.</td>
<td>whether violence was a factor in admission).</td>
<td>factor in admission) about 40 male patients admitted to an acute unit.</td>
</tr>
<tr>
<td></td>
<td>Population: psychiatrists, clinicians (n=30) 40 male service users.</td>
<td></td>
<td>• Predictive accuracy.</td>
<td>• They predicted which service users would be violent during the first seven days, with low mean true positive (0.27) and negative rates (0.39).</td>
</tr>
</tbody>
</table>

**Reviewer’s comments**
- Taken from RCPsych review.
### Actuarial approaches and actuarial tools

<table>
<thead>
<tr>
<th>Source</th>
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<th>Aims of study</th>
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<th>Results</th>
</tr>
</thead>
</table>
| Almvik & Woods (1998)   | Prospective cohort study (over two months). Setting: three psychiatric hospitals. Population: 109 service users. | To test the predictive validity of the Brøset violence checklist (BVC) in predicting short-term violence. | Six items included on checklist: • confused • irritable • boisterous • physically threatening • verbally threatening • attacking objects. (Rated on day of admission and then for following three days - further data collected from ward incident forms). A score of 2 or above signified violence in next 24 hours. | • All six measures significantly differentiated violent from non-violent service users (p <0.001).  
  • Predictive validity 66 false positives, 70 true positives, 24 false negatives, 710 true negatives (sensitivity=74%, specificity 91%). |

**Reviewer’s comments**
Authors acknowledge that the study is at a preliminary stage and question whether the score of 2 is too low give the large number of false positives. However, they suggest that nursing interventions may have accounted for some of these. 
No account taken of behaviour prior to admission; no account taken of nursing interventions that may have prevented an incident.
### Source
Arango et al. (1999)

### Study design
Five-month prospective controlled cohort study.

### Setting
76-bed psychiatric short-term unit in a university general hospital.

### Population
63 service users with DSM-IV diagnoses of schizophrenia and schizoaffective disorder.

### Aims of study
To delineate clinical, historical and demographic characteristics of violent vs. non-violent service users that have predictive validity.

### Outcome measures
- Severity of aggression [Incidents were rated using overt aggression scale (OAS)].
- Demographic information.
- Pathology [positive and negative syndrome scale (PANSS), neurological syndrome scale (NES), EEG].
- Insight [scale of unawareness of mental disorder].
- Violence prior to admission.

### Results
25.4% were violent towards others - none scored higher than 3 (OAS).
14.3% exhibited threatening behaviour.
Base rate of violence (25%).
A significant correlation between violence in week prior to admission and violence in study was found (p<0.05).
Single-variable logical regression resulted in correct classification of 74-79% of violent and non-violent groups (total PANSS scores sensitivity=31.3%, specificity=91.5%, positive predictive value=55.5%, negative predictive value=79.6%).
Insight into psychotic symptoms was single best predictor.
Three variables, insight, general psychopathology score and violence in previous week correctly classified 84.13% of service users (p<0.0001).
Specificity=95.7%, positive predictive value=80%, negative predictive value=84.9%, sensitivity=50%.
Violence correlated with longer stay (p<0.05).
Most incidents occurred in the first week of admission.

### Reviewer’s comments
Authors argue that study confirms belief that socio-demographic factors lose predictive importance once service user is admitted.
Authors note generalisability is limited by: the sample size (only 16 service users were violent) and because the statistical model for prediction is not cross-validated in a separate sample. They note that the results are not generalisable to other settings.
## Barlow et al. (2000)

**Country:** Australia  
**Evidence level:** 2+  

<table>
<thead>
<tr>
<th>Source</th>
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</thead>
</table>
| Barlow et al. (2000) | 18-month prospective cohort study. Setting: four adult psychiatric units (one secure unit). Population: 1,269 adult service users. | To determine prevalence, characteristics and causal factors of aggression. | Use aggressive/assaultive incident form to assess:  
  - aggressive incident (verbal or physical aggression directed towards self or others irrespective of outcome)  
  - socio-demographic information  
  - causal factors  
  - damage and/or injury  
  - admission information  
  - clinical data  
  - date  
  - time  
  - focus of assault.  
  (Data collected with the aggressive/assaultive incident report form). | Significant differences between aggressive and non-aggressive service users:  
  - number of admissions (p=0.00)  
  - length of stay (p<0.00)  
  - schizophrenia (OR=1.96) or bi-polar affective disorder (OR=2.81), depression (OR=0.44) adjustment disorder (OR=0.54).  
  Cause of incident was mostly rated by witness as service users’ mental state (65.7%). Random subset of aggressive cases (n=60/174) identified. 53.3% had delusions or hallucinations. 78.6% were big substance abuses and multiple aggressors. |

**Reviewer’s comments**  
Authors note the relationship between aggression and delusions or hallucinations cannot be properly evaluated on the basis of this study due to data collection process, lack of developed scales and untrained data collectors.  
Authors acknowledge that despite safeguards, there may have been some bias in reporting aggressive incidents.
### Study design

<table>
<thead>
<tr>
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</tr>
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</table>
Sex.  
Diagnosis.  
Number of previous admissions.  
Reason for admission on commitment paper.  
Date service user chose voluntary status.  
Seclusion.  
Mechanical restraint.  
Involuntary medication.  
Threats.  
Assaults.  |

| Setting: state hospital.  
Population: 100 emergency civil committed service users. |  |

### Results

- Specificity of predictions of violence during first day of hospitalisation, based on commitment as a danger to others after violent acts in the community =0.71, sensitivity =0.86, positive predictive value=0.31, negative predictive value=0.97.
- Previous history of violence was best predictor.
- There was no significant relationship between reason for commitment and hospital violence on day two or three.
- No correlation between reason commitment and intervention.
- Psychiatrists’ judgement adds little extra predictive power.

### Reviewer’s comments

Authors postulated that service users admitted for assaults in the community were more likely to threaten or assault others during the first day of hospitalisation. However, service users who had threatened in the community were not more likely to be violent.
<table>
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</tr>
</thead>
<tbody>
<tr>
<td>Cheung et al. (1996)</td>
<td>Eight-week prospective cohort study.</td>
<td>To assess the prevalence and nature of aggressive behaviour and the risk factors associated with aggressive behaviour.</td>
<td>• Aggressive behaviour (measured by the SOAS).</td>
<td>• Multiple logical regression was used to calculate the effects of various service user characteristics on aggressive behaviour.</td>
</tr>
<tr>
<td>Country: Australia</td>
<td>Setting: large psychiatric hospital.</td>
<td></td>
<td>• Demographics.</td>
<td>• Only male gender (p&lt;0.01) and duration of admission (p&lt;0.05) correlated with aggression status. When considering types of aggression, only male gender correlated with physical aggression (p&lt;0.02) and only duration of admission correlated with verbal aggression (p&lt;0.05).</td>
</tr>
<tr>
<td>Evidence level: 2+</td>
<td>Population: 220 service users (all in-patients).</td>
<td></td>
<td>• Ward environment.</td>
<td>• The most severe incidents tended to occur in the afternoon (p&lt;0.001). No other ward factors were significant.</td>
</tr>
</tbody>
</table>

**Reviewer’s comments**

Authors note that more variables could have been considered and note that the lack of correlation between diagnosis and aggression could have resulted from the majority of service users having schizophrenia, therefore, not allowing diagnostic variables to be fully tested. These findings are not generalisable and need to be validated in a number of settings.
<table>
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</thead>
<tbody>
<tr>
<td>Cheung et al. (1997a)</td>
<td>Case-controlled study.</td>
<td>To assess the likelihood that service users with schizophrenia will be</td>
<td>• Age.</td>
<td>• Statistical tests used and levels of significance set at 5%.</td>
</tr>
<tr>
<td>Country: Australia</td>
<td>Setting: rehabilitation</td>
<td>violent, based on hallucinations/delusions.</td>
<td>• Gender.</td>
<td>• No significant demographic differences between violent and non-violent groups.</td>
</tr>
<tr>
<td>Evidence level: 2+</td>
<td>wards.</td>
<td></td>
<td>• Age at first psychiatric admission.</td>
<td>Violent group was significantly more likely to say that voices:</td>
</tr>
<tr>
<td></td>
<td>Population: 31</td>
<td></td>
<td>• Hallucinations (tone, volume, frequency, duration, degree of reality, content,</td>
<td>• made them sad (p&lt;0.05)</td>
</tr>
<tr>
<td></td>
<td>violent service users with</td>
<td></td>
<td>emotional response, coping).</td>
<td>• made them angry (p&lt;0.05)</td>
</tr>
<tr>
<td></td>
<td>schizophrenia (31 non-violent matched controls).</td>
<td></td>
<td>Delusions (degree of conviction, evidence that could maintain conviction, affect generated by belief, action in response to believe, degree of preoccupation, degree of systematisation, level of insight).</td>
<td>• made them feel intruded upon (p&lt;0.05)</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>• were malicious/nasty (p&lt;0.05).</td>
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<td>Non-violent group was significantly more likely to say that voices:</td>
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<td></td>
<td></td>
<td></td>
<td>• made them feel comforted (p&lt;0.05)</td>
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<td>• made them unconcerned (p&lt;0.05)</td>
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<td></td>
<td>• were helpful (p&lt;0.001)</td>
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<td></td>
<td>• were guiding (p&lt;0.001).</td>
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<td></td>
<td>All members of non-violent group who had ways of managing the voices (8) reported success, compared to only one in the violent group (p&lt;0.01).</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Violent group was more likely to have delusions that were persecutory (p&lt;0.01); made them feel angry (p&lt;0.0001).</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Non-violent group was more likely to have delusions that were grandiose (p&lt;0.01); made them elated (p&lt;0.001). Angry effect was independent of delusions and significant (p&lt;0.05).</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>There were no significant differences between the two groups regarding how often they reported command hallucinations.</td>
</tr>
</tbody>
</table>

Reviewer’s comments
Author note that group with delusions was too small for any firm conclusions to be drawn.
Authors note that in a cross-sectional study, the exact nature of causality cannot be determined.
Authors stress the need to replicate these findings amongst a larger group and sample size small.
Cheung (1997c)
Country: Australia
Evidence level: 2-

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td></td>
<td>Case-controlled study.</td>
<td>To determine the psychological correlates of aggressive behaviour in schizophrenia.</td>
<td>• Aggressive behaviour.</td>
<td>There was no significant difference between the two groups regarding the proportion of sub-types of schizophrenia (p=0.5).</td>
</tr>
<tr>
<td></td>
<td>Setting: rehabilitation wards.</td>
<td></td>
<td>• Demographic information.</td>
<td>Aggressive group had a significantly higher CGI score, higher mean positive symptom subscale, negative symptom subscale, general psychopathology subscale and total PANSS score.</td>
</tr>
<tr>
<td></td>
<td>Population: 31 aggressive service users suffering with schizophrenia and 31 matched controls.</td>
<td></td>
<td>• Clinical variables.</td>
<td>After controlling for the effect of the total PANSS score, only hostility (p&lt;0.001), unco-operativeness (p&lt;0.01) and poor impulse control (p&lt;0.001) were associated with aggressive behaviour.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Psychopathology (assessed using the positive and negative syndromes scale (PANSS) and the Montgomery-Asberg depression ratings scale (MADRS) and the seven-point clinical global impression scale (CGI)).</td>
<td></td>
</tr>
</tbody>
</table>

**Reviewer’s comments**

Note that the author studies the same group of service users as in Cheung (1997a), which is also included in this review, and Cheung (1997b), which is excluded from this review.
Authors note that this study was conducted on service users late in their hospitalisation and that more research is needed to test the generalisability of these results amongst service users with schizophrenia in general.
<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Chou et al. (2002)</td>
<td>Seven-month cohort study. Setting: seven acute in-patient psychiatric units in four hospitals. Population: 287 adults and geriatric service users.</td>
<td>To examine patterns and characteristics of assault. To examine the relationship between service user assault, service user, environmental and staff factors.</td>
<td>• Service user demographic information, clinical information. <strong>• Staff demographic information.</strong>  <strong>• Ward environment (location of assault, time, space density, number of service users on ward etc).</strong>  <strong>• Assault.</strong> Recorded using overt aggression scale (OAS), staff observation aggression scale (SOAS), patient characteristic form (PCF) and environmental assessment questionnaire (EAQ).</td>
<td>• 855 acts of aggression occurred (includes assault on people, objects and verbal abuse).  Most victims were other service users (55.2%).  No significant differences between non-assaultive service users were found in terms of education, marital status and occupational status. Best discriminating variables were: history of violence (OR=4.14), psychotic diagnosis (OR=2.07), history of smoking (OR=1.45), duration of admission (OR=0.99). Sensitivity=542/845, specificity 601/849.  Most assaults occurred between 5pm and 7pm and 12pm and 2pm. 28.1% were in service users’ bedrooms, 25% were in front of the nursing station, 16.8% were in the dining room, and 13.8% were in the ward corridor. Severity of assault was related to space density (p&lt;0.01) and staff/patient ratio (p&lt;0.01).  No significant differences were found between nurses in terms of gender, marital status or religion. Mean of assaulted nurses however showed that they were younger than non-assaulted nurses (OR=0.65) and had less work experience (OR=0.91), the majority were only trained junior nursing college (66%). Training in the management and prevention of assaults had an OR of 7.73.  Patient-staff conflict was the most frequent cause of assault (56.7%), followed by service user-patient conflict (43.3%).  Did not find history of alcohol abuse to be predictive of abuse.</td>
</tr>
</tbody>
</table>

**Reviewer’s comments**
Authors argue that the findings indicate that aggression is a multi-factorial issue, which encompasses service user, environmental and staff factors. Authors warn that these results are obtained within a specific context and that their wider generalisability, even in Taiwan, is uncertain. Well thought out study with good analysis.
### Eaton et al. (2000)

**Country:** UK  
**Evidence level:** 2-  

<table>
<thead>
<tr>
<th>Study design</th>
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<th>Results</th>
</tr>
</thead>
</table>
| One-month retrospective cohort study. Setting: 20-bed locked ward in general psychiatric facility. Population: 52 service users admitted under Mental Health Act for longer than 28 days. | To identify service users at admission who are more likely to commit violent behaviour. | • Violence (physical contact or causing injury).  
• Demographic information (if male, Afro-Caribbean, unemployed, homeless).  
• Historical data (if previous violence, violent injury, detention in courts, any conviction, violent conviction).  
• Clinical data (schizophrenia, past admission, paranoid delusions, command hallucinations, drugs, alcohol). (Only data available at admission). | No predictive variables were isolated. |

**Reviewer’s comments**

Authors argue that the high-risk nature of the service users means that risk management strategies need to be applied to all service users in this setting.  
Authors note a number of limitations, such as retrospective design, and possibility of incorrect variables.
**Source**
Ehmann et al.  
(2001)

**Country:** US

**Evidence level:** 2-

**Study design**
Two-year prospective cohort study (no control).

**Setting:** 20-bed locked in tertiary care facility.

**Population:** 78 treatment resistant or difficult diagnosis service users (17-65) [64 for prediction].

**Aims of study**
- To describe rates and characteristics of aggression.
- To assess accuracy of incident reports.
- To discern relationships between types of aggression.
- To delineate clinical, historical and demographic characteristics of violent vs. non-violent service users that have predictive validity.

**Outcome measures**
- Demographic information.
- Diagnosis.
- Number of incidents (MOAS scores compared to hospital incident forms).
- Psychopathology [rated with the positive and negative syndrome scale (PANSS), routine assessment of patient progress (RAPP), the global assessment of functioning (GAF; DSM-IV axis V), clinical global impression (CGI), degree of treatment resistance (DOR), DSM-III-R diagnoses, and the premorbid adjustment scale].
- Aggression (injury or threat to people, property, self).
- Assault (injury to person).
- Violence (defined as MOAS 3 or 4).

**Results**
- Statistical analysis was used (p=0.05=significance).
- 64% service users were assaultive.
- 26% assaulted others more than once.
- Incidents reported underestimated violence by 45%, self harm by 65% and property damage by 73%.
- Violence spread over admission, not only in first few weeks in long stay service users.
- Assault correlated with self-harm (p=0.0001) and aggression to objects (p=0.0001).
- Aggression to objects correlated to self-harm (p=0.0001) and verbal aggression (p=0.0001).
- Serious assaults failed to correlated with other forms of aggression.
- In first four weeks, mean MOAS scores for assault correlated with self harm (p=0.002, object aggression (p=0.001) and verbal aggression (p<0.001).
- Violent (MOAS 3 or 4) vs. non-violent groups:
  - Best predictors were alcohol abuse in past year, female and diagnosed with non-paranoid schizophrenia. Using PANSS sensitivity=67%, specificity=91%, positive predictive value=71% (base rate=24%) 47% improvement over chance. If RAPP safety score substituted for PANSS total score sensitivity=81%, specificity=96%, positive predictive value=87%, improvement over chance=62%.
  - Logical regression formula substituting RAPP total for PANSS total gave negative predictive value of 93% and a positive predictive value in random subset 1 of 78% and 62% in random subset 2.
  - Best univariate predictors were poor premorbid adjustment, early age at illness onset, greater psychopathology and poor functioning at admission.

**Reviewer’s comments**
As only 6% of assaults occurred during night shift in year one, no ratings were taken during the night shift in year two.
Authors argue that results indicated that the relationship between assault and verbal aggression declines over time. After first month, only related to property damage and self-harm.
Authors note that correlates of violence are dependent on definition.
Authors note that the inclusion of a clinical judgement item (RAPP safety item) greatly enhanced predictive validity.
<table>
<thead>
<tr>
<th>Source</th>
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<th>Aims of study</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Grassi et al. (2001)</td>
<td>Five-year prospective cohort study. Setting: 15-bed locked acute psychiatric unit. Population: 116 patients out of a population of 1,534 who were responsible for 329 aggressive incidents.</td>
<td>To assess characteristics of violence.</td>
<td>Characteristics of violence as defined by SOAS and SOAS-R.</td>
<td>Violent service users differed from those who were non-violent by:</td>
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<tr>
<td></td>
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<td>• being younger (p&lt;0.01)</td>
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<td>• single (p&lt;0.001)</td>
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<td>• living with nuclear family (p&lt;0.001)</td>
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<td>• longer hospital stay (p&lt;0.001)</td>
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<tr>
<td></td>
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<td></td>
<td>• diagnoses of schizophrenia and acute psychosis (p&lt;0.001). Using SOAS-R higher scores for acute psychosis and substance abuse disorder than schizophrenia, bipolar affective disorder - manic episode and personality disorder (p&lt;0.05). Females score higher than males on both SOAS and SOAS-R totals (p&lt;0.001).</td>
</tr>
</tbody>
</table>

Reviewers comments
- Authors note the following limitations: limited generalisability; clinical factors were not considered, nor was pre-admission substance abuse; history of self-harm and data on lifetime aggression was limited.
- Authors note the records of verbal assault appear low, but note that this could result from recording bias.
- Authors note that most violent service users had a history of violence, but do not give information on how this variable compared to non-violent service users.
Violence: The Short-Term Management of Disturbed/Violent Behaviour in Psychiatric In-patient and Emergency Departments Guideline

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</thead>
</table>
• Clinical information.  
• Time of day.  
• Legal status. | • Incidents peaked at mealtimes, medication times, and time when day staff leave and night staff arrive.  
• Violent service users tended to have been on the ward longer than non-violent service users ($p<0.001$).  
• Type of section also appeared to be significant ($p<0.001$).  
• Violent service users tended to younger ($p<0.001$).  
• Year admitted to unit was also significant. More violent incidents were recorded before 1987 ($p<0.002$). Changes in policy probably account for this. |

Reviewer’s comments
- Violent incidents recorded on standard hospital incident forms, therefore possible recording bias. Also forms changes over the course of the study.
- Authors suggest that C&R policy and new senior nurse may account for reduction in violence, post 1987.
<table>
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</tr>
</thead>
</table>
| Hillbrand (2001) | Three-year retrospective cohort study.     | To assess the relationship between severity of verbal threat and likelihood of violent behaviour. | • Severity of verbal threat measured using OAS (overt aggression scale).  
• Violent act.  
• Ethnicity.  
• Martial status.  
• Reason for referral.  
• Crime. | • Inter-rater reliability ranged from 0.84-0.97.  
• Reliability and validity of OAS discussed elsewhere.  
• 10 records were deleted because of missing data.  
• Statistical analysis revealed statistically significant correlation between severity of verbal aggression and violence against objects (r=.39), self (r=.64) and others (r=.92). There were also significant correlations between the frequency of verbal aggression and these three types of aggression (object r=.34; self r=.55; others r=.90).  
• Whilst all types of verbal aggression correlated significantly with physical aggression (p<0.01) the correlation was greater for threatening verbal aggression (r=94) than for non-threatening verbal aggression (r=.62). Frequency of physical aggression increases with severity of verbal aggression.  
• Diagnosis and length of stay were not significant predictors of violence against others. |

<table>
<thead>
<tr>
<th>Reviewer’s comments</th>
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</thead>
<tbody>
<tr>
<td>• Author notes that this is not a predictive study so that it is not possible to conclude that threatening and non-threatening behaviour predict assaultive behaviour. Rather there is an 80% chance that when threatening behaviour is present, assaultive behaviour will result ($r^2=.81$). Within this, threatening behaviour results in a probability of assault of .88, whilst non-threatening behaviour results in a probability of assault of .38.</td>
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<tr>
<td>• Author notes that women are not included in the study.</td>
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<tr>
<td>• Method of randomly selected control group is not mentioned.</td>
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<tr>
<td>• Small number of service users in each diagnostic group limits findings that diagnosis is not significant.</td>
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<td>• Did not look at past events for service users.</td>
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<tr>
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</tbody>
</table>
| Junginger et al. (1998) | Semi-structured interviews.  | To determine the extent to which delusions motivate violent behaviour amongst service users with a history of delusions. | • Delusions.  
• Delusional motivation.  
• History of violence.  
(Assessed through semi-structured interviews). | • Based on mean rating by two pair groups of raters, it appeared that delusions exerted little influence on violent incidents.  
• Even when the violent subgroup were considered in isolation i.e. those who reported one probably association between delusions and violence, delusions still appeared to exhibit little influence on violent incidents.  
• However, within the violent subgroup 17.5% reported that their most violent behaviour was motivated by concurrent delusions. |

**Reviewer’s comments**  
• Authors comment that it is very difficult to know how to identify those who will be violent as a result of delusions. The study is retrospective and does not make allowances for reporting bias.
### Study design

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Kay et al. (1988)</td>
<td>Three studies reported two cross-sectional, one three-month prospective cohort (only the prospective cohort is discussed here).</td>
<td>To test the predictive validity of the aggression risk profile (ARP) in predicting psychiatric in-patient violence.</td>
<td>39 items contained within the tool covering four main areas:</td>
<td>• Significant predictors of violence were found, seven of these were specific to verbal or physical violence but not to both.</td>
</tr>
<tr>
<td>Country: USA</td>
<td>Setting: 600-bed urban psychiatric hospital</td>
<td></td>
<td>• demographics</td>
<td>Aggression generally was predicted by: younger age, more acutely ill, more threatening of violence by history and previously rated more agitated and labile in affect.</td>
</tr>
<tr>
<td>Evidence level: 2-</td>
<td>Population: 37 psychiatric service users on a chronic care unit (mostly with schizophrenia).</td>
<td></td>
<td>• current psychiatric diagnosis</td>
<td>Verbal aggression was predicted by: motor excitement, difficulty with gratification, depressed feelings.</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>• history of aggression</td>
<td>Physical violence was predicted by: anger, hostility, history of attacks on others, history of greater total aggression.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• clinical profile.</td>
<td>Noted that history of aggression, although a good predictor on its own, did not enter into the regression formula for the strongest predictive combination because subsumed by other variables in the tool.</td>
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<tr>
<td></td>
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<td>Incidents of aggression were measured using MOAS.</td>
<td>After stepwise multiple aggression all types of aggression were significantly predicted: verbal (p&lt;0.025), physical (p&lt;0.01) and total aggression (p&lt;0.05).</td>
</tr>
</tbody>
</table>

### Reviewer's comments

Authors note that while the best predictors were established by a combination of demographic and clinical variables, greater specificity was achieved by clinical variables. Authors note that the results may not be generalisable to different service user populations or in different settings. Authors note that the work needs validating.
Kho et al. (1998)

Country: UK
Evidence level: 2+

<table>
<thead>
<tr>
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</thead>
</table>
| Five-month prospective cohort study. Setting: five wards (four acute admission, one locked) in two hospitals. Population: 360 acute psychiatric inpatients (wards had same catchment areas or similar populations). | To confirm reliability of MOAS (modified overt aggression scale) for use in everyday clinical practice. To examine whether commonly cited factors (demographic and clinical) associated with aggression are applicable to acute psychiatric admission units in general. | - Stage of admission.  
- Gender.  
- Ethnic group.  
- Type of Ward.  
- Primary diagnosis.  
- Age. | - Levels of aggression varied significantly over stage of admission.  
- Women were more likely than men to be aggressive against objects.  
- Asian women were more likely to exhibit aggression than other groups after the first two weeks of admission.  
- Aggression was likely on the locked ward, although ward E had high levels of aggression.  
- A diagnosis on mania or substance misuse was most likely to lead to verbal aggression.  
- Individuals aged <30 years were more likely to be aggressive in the first two weeks of admission - significant only for verbal aggression and aggression against objects.  
- MOAS rating was weighted towards serious aggressive incidents.  
- MOAS Inter-rater reliability was moderate (weighted kappa 0.58) Authors suggest that this could be improved by providing training, selecting only the most highly qualified nurses to act as raters and limiting the number of raters. |

Reviewer’s comments
- This is a well-designed study, which suggests that the MOAS rating scale can be applied to a clinical environment.
- Confounders controlled for using statistical analysis.
- The authors note that the study design does not allow causes and effects to be discriminated so that factors truly predictive of aggression cannot be identified.
- Authors note that other factors that might have confounded the results - such as ward environment, management of service users and interactions with staff - are not addressed.
- Others stress that results did not show that young black Afro-Caribbean males were highly aggressive.
## Source

<table>
<thead>
<tr>
<th>Krakowski et al. (1999)</th>
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</thead>
<tbody>
<tr>
<td>Country: US</td>
</tr>
<tr>
<td>Evidence level: 2+</td>
</tr>
</tbody>
</table>

### Study design

Four-week prospective controlled cohort study (Three groups: violent; persistently violent; and transiently violent).

Setting: two state psychiatric hospitals.

Population: newly admitted adult service users with schizophrenia or schizoaffective disorder (96 violent and 81 non-violent).

### Aims of study

To identify correlates of violence which differentiate between violent, persistently violent and transiently violent service users.

### Outcome measures

- Physical assaults (recorded using MOAS).
- Verbal assaults (recorded using MOAS).
- Medication.
- Demographic and historical information.
- Psychiatric symptoms [brief psychiatric rating scale (BPRS)].
- Ward behaviours [measured using NOSIE irritability, routine and social subscales].
- Neurological abnormalities [measured by the quantified neurological scale (QNS)].

### Results

- Inter-rater reliability for physical assaults=0.94 and for verbal assaults=0.89.
- Inter-rater reliability for BPRS=0.87-0.98.
- Inter-rater reliability for NOSIE subscales >0.80.
- Inter-rater reliability for QNS=0.69-1.00.

Significant results:

- Violent group had more severe psychiatric symptoms than non-violent group (p<0.001).
- Violent group had more severe neurological symptoms than other two groups (p<0.03).
- QNS score was related to violence in last 18 days (p=0.02).
- QNS score was positively related to endpoint BPRS anergia in violent group (p<0.01) and endpoint hostility-suspiciousness (p<0.001).
- Statistical analysis applied to clinical variables correctly classified 64% of non-violent service users, 59% of persistently violent service users and 59% or transiently violent service users.

### Reviewer’s comments

Authors argue that early in hospitalisation positive psychotic symptoms are related to violent behaviour. Violent service users were also more irritable and had more difficulty following ward rules and regulations.

Authors also note that the role in violent behaviour of more serious neurological symptoms cannot be determined by this study.

Authors note that positive and negative symptoms can predict if followed for >four weeks.

Authors could have given better differentiation between the groups.
<table>
<thead>
<tr>
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</table>
• OAS (overt aggression scale) to record violent incidents. | • Subsequent physical violence occurred in 27 patients.  
• Three BPRS summary scores at admission were significantly associated with subsequent assaults compared with the rest: thinking disturbance (mean score 10.0 v. 6.28), hostile-suspiciousness (9.44 v. 5.81) and agitation-excitement (5.89 v. 3.89). |

**Reviewer’s comments**
- Taken from RCPsych review.
<table>
<thead>
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</tr>
</thead>
<tbody>
<tr>
<td>McNiel et al. (1988)</td>
<td>Retrospective</td>
<td>To assess whether service users who were violent in the community two weeks</td>
<td>Violent incidents - no violence, fear inducing behaviour, attacks of persons (from</td>
<td>• There was a significant positive correlation between violent behaviour in the community</td>
</tr>
<tr>
<td>Country: USA</td>
<td>cohort study.</td>
<td>prior to emergency civil commitment were more likely to be violent in the first</td>
<td>medical charts) service user characteristics.</td>
<td>two weeks prior to commitment and violent behaviour during the 72-hour commitment (p&lt;0.0001).</td>
</tr>
<tr>
<td>Evidence level: 2-</td>
<td>Setting: university</td>
<td></td>
<td></td>
<td>• Ethnicity, social class, residence with family, history of substance abuse were not</td>
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<tr>
<td></td>
<td>acute in-patient unit.</td>
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<td>significantly different for violent and non-violent groups.</td>
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<td></td>
<td>Population: 238</td>
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<td>• Married service users were over represented in the physical violent group.</td>
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<tr>
<td></td>
<td>emergency 72-hour civil</td>
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<td>• Single mothers were over represented in the fear-inducing group.</td>
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<td></td>
<td>committed service users.</td>
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<td>• Suicidal service users were less likely to be violent than non-suicidal</td>
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<td>service users.</td>
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<td>• History of violent behaviour, fear-inducing behaviour and no violence was the variable</td>
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<td>most predictive of later violence.</td>
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<td></td>
<td></td>
<td>• Statistical analysis verse clinical predication</td>
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<td></td>
<td>True positive 45.5% vs 26.7%. false positive 54.5% vs. 73.3% sensitivity 23.3% vs. 62.8%.</td>
</tr>
</tbody>
</table>

**Reviewer’s comments**

Authors note that the statistical model was only better at predicting service users who physically attacked rather than those service users who were violent in some way. Clinical predictions identified more service users who did attack others by over-predicting violence.
<table>
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<tbody>
<tr>
<td>McNiel &amp; Binder (1989)</td>
<td>Retrospective cohort Study. Setting: university locked short-term psychiatric unit. Population: 253 service users (all admission is last six months + 150 randomly selected from previous year).</td>
<td>To assess the relationship between pre-admission threats two weeks prior to hospitalisation and in-patient violence in the first three days of hospitalisation.</td>
<td>• Seclusion. • Physical assault. • Threats. • Demographic information. • Diagnosis.</td>
<td>• Patients who made threats prior to admission were significantly more likely to make physical assaults (p&lt;0.002) and verbal threats (p=0.0001) and to be secluded for dangerous behaviour (p=0.0001). • Service users suffering with schizophrenia who made threats prior to admission were more likely to make physical assaults (p&lt;0.002) and verbal threats (p&lt;0.0001) and to be secluded for dangerous behaviour (p&lt;0.0001). • Manic service users who made threats prior to admission were more likely to be verbally assaultive (p&lt;0.03). • Other service users who made threats prior to admission were more likely to make verbal threats (p&lt;0.01) and to be secluded for dangerousness (p&lt;0.03).</td>
</tr>
</tbody>
</table>

Reviewer's comments
Retrospective study - no allowance is made for under-reporting. Authors state they may have missed important predictors. Small sample size, two service users caused 19 of 56 violent incidents. Included in RCPsych evidence review.
<table>
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</tr>
</thead>
</table>
| McNiel & Binder (1994a) | 20-month prospective cohort study.    | To assess the usefulness of a screening checklist  | • History of physical attacks/fear inducing behaviour two weeks prior to admission. | For all aggressive behaviour:  
positive predictive value=59.0%  
negative predictive value=70.6%  
sensitivity=57.2%  
specificity=70.0%  
total predictive value=65.4%  
likelihood ratio=1.97  
relative improvement over chance=28.3%.  
For physically aggressive behaviour:  
positive predictive value=41.1%  
negative predictive value=82.1%  
false positive rate=67.9%  
false negative rate=18.0%  
sensitivity=55.0%  
specificity=64.0%  
total predictive value=61.8%  
likelihood ratio=1.52  
relative improvement over chance=28.3%. |
| Country: USA            | Setting: university-based in-patient  | for predicting violence in future newly hospitalised in-patient. | • Absence of suicidal behaviour two weeks prior to admission.                       |                                                                         |
| Evidence level: 2+      | Population: 338 psychiatric service   |                                                    | • Schizophrenia or manic diagnosis.                                               |                                                                         |
|                        | users.                                |                                                    | • Gender.                                                                         |                                                                         |
|                        |                                       |                                                    | • Marital status.                                                                  |                                                                         |
|                        |                                       |                                                    | Actuarial tool assessment (a screening checklist).                                 |                                                                         |

**Reviewer’s comments**

Violence was rated using the overt aggression scale (OAS).
Nursing charts were reviewed to reduce bias.
Authors argue that the results suggest the potential value of using actuarial methods in evaluating service users risk of violence.
Included in RCPsych evidence review.
<table>
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<tbody>
<tr>
<td>McNiel &amp; Binder</td>
<td>Cohort study.</td>
<td>To assess relationship between acute psychiatric symptoms, diagnosis, and short-term risk of violence.</td>
<td>• BPRS (brief psychiatric rating scale) on admission and at the end of each shift.</td>
<td>• A profile of five summary BPRS scores was compared by diagnosis and between 77 assaultive patients (23%) and the rest.</td>
</tr>
<tr>
<td>(1994b)</td>
<td>Setting: locked short-stay unit.</td>
<td></td>
<td>• OAS to record violent incidents (overt aggression scale) at the end of each shift.</td>
<td>• The proportions of violence by diagnosis were: schizophrenia 36%, mania 28%, organic psychoses 27%, the rest 12%.</td>
</tr>
<tr>
<td></td>
<td>Population: 330 service users.</td>
<td></td>
<td></td>
<td>• A complex analysis showed three summary scores significantly associated with violence: hostile-suspiciousness, agitation-excitement and thinking disturbance.</td>
</tr>
<tr>
<td></td>
<td>Evidence level: 2+</td>
<td></td>
<td></td>
<td>• Schizophrenia had lower associations than the other diagnoses.</td>
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</tbody>
</table>

**Reviewer’s comments**
- Taken from RCPsych review.
<table>
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<tr>
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</thead>
</table>
| Morrison (1992) | Prospective cohort study.  | To assess whether a coercive interpersonal style was positively predictive of violence and aggression, whilst being negatively predicted by an accommodating interpersonal style. | These two types of style were proposed to mediate the effect of the following antecedent variables:  
• history of violence  
• psychiatric diagnosis  
• length of hospitalisation. | Multiple regression analyses were used.  
• Coercion was the strongest predictor of violence.  
• Only bipolar disorder was found to be directly predictive of aggression.  
• Other variables that affected prediction were: satisfaction with care, social desirability, history of violence, site and schizophrenia.  
• A significant relationship was found between site and coercion that suggested that service users in the state hospital were more aggressive (state hospital were diagnosed with schizophrenia and substance abuse while those in the private hospital were diagnosed with depression).  
• A significant relationship was found between coercion and satisfaction of care, suggesting that those service users who were less satisfied with their care were more likely to be aggressive.  
• An inverse relationship between social desirability and coercion. |

**Reviewer’s comments**  
• Author argues that intimidation and interpersonal control scales could be useful in identifying those at risk of being aggressive or violent.  
• Does not offer positive and negative predictive values or number of false positive and false negatives.
### Source
**Palmstierna & Wistedt (1989)**  
Country: Sweden  
Evidence level: 2+

### Study design
Prospective cohort study.  
Setting: acute psychiatric.  
Population: 105 admitted and involuntary psychiatric service users.

### Aims of study
- To determine the factors that best predict violence in the short term, at eight days and at 28 days.

### Outcome measures
Staff observation aggression scale (SOAS). Main outcomes considered:  
- age  
- sex  
- diagnosis  
- history of violence  
- previous conviction for violent crime.

### Results
- At eight days, the only significant predictor was known previous damage to property or physical injury to person ($p<0.05$).  
- At 28 days, the only significant predictor was known abuse of drugs other than alcohol ($p<0.05$).  
- Because determination coefficients are very low ($3.9$ and $5.4\%$ respectively), authors state that results indicate that risk factors are of limited value in predicting violence inside acute institutions.  
- Also note that at 28 days females tend to be more aggressive, but the result is not significant.

### Reviewer’s comments
- Authors argue that certain risk factors for aggressive behaviour in outpatient settings are of limited value in the short-term prediction of violence amongst acute involuntary service users.  
- Authors comment that different time perspectives demand different prediction procedures.  
- Analysis by multivariate approach could explain why several factors did not reach significance, where they did in other papers.  
- Factors chosen were from a list published in 1983, probably different in 2003.  
- Follow-up period rather long – eight and 28 days - different from other papers.
<table>
<thead>
<tr>
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</table>
| Palmstierna & Wistedt  | Cohort study.                    | To assess whether risk factors for aggressive behaviour are of limited value in predicting the violent behaviour of acute involuntarily admitted patients. | • OAS to record violent incidents (overt aggression scale) at the end of each shift | • Twelve items of information were collected at the admission of acute service users who stayed three days or more during a six-month period.  
• Severe aggressive incidents were enumerated using the staff observation aggression scale (6+) during the first eight and the first 28 days.  
• There were 14 incidents within the first eight days after admission, the only predictor being previous damage to property or person (r=0.20).  
• The only predictor of 20 incidents within the first 28 days was use of drugs other than alcohol (r=0.23). |

Reviewer’s comments
- Taken from RCPsych review.
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<tbody>
<tr>
<td>Oulis et al. (1996)</td>
<td>Cross-sectional.</td>
<td>To determine the prevalence and types of violence and the correlates.</td>
<td>• Verbal aggression.</td>
<td>• Clinical and demographic variables were not significant in distinguishing non-aggressive and aggressive service users.</td>
</tr>
<tr>
<td>Country: Greece</td>
<td>Setting: two inner-city psychiatric clinics.</td>
<td></td>
<td>• Aggression against property.</td>
<td>• Verbal aggression was significantly associated with agitation, low tolerance of frustration, difficulty in delaying gratification and anger (adj. R squared=0.392).</td>
</tr>
<tr>
<td>Evidence level: 2+</td>
<td>Population: 136 acute and chronic psychiatric in-patients.</td>
<td></td>
<td>• Self-harm.</td>
<td>• Aggression against property was significantly associated with bizarre behaviour or rituals (negatively), delusions, disorganised thinking and anger (adj. R squared=0.271).</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Physical aggression.</td>
<td>• Self-harm was significantly correlated with anger (adj. R squared=0.133).</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Measured using the aggression risk profile (ARP) and the MOAS.</td>
<td>• Physical aggression was significantly correlated with agitation, disorganised thinking, anger and anti-social behaviour (adj. R squared=0.288).</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Total anger was significantly correlated with bizarre behaviour or rituals (negatively), disorganised thinking and anger (adj. R squared=0.355).</td>
</tr>
</tbody>
</table>

Reviewer’s comments
- All forms of aggressive behaviour were considered, therefore, all service users who scored 1 or above were included in the aggressive group.
- Authors note that their study confirms that of Kay et al. (1988).
- Authors assert that the results indicate the best predictors of aggression. However, these need to be confirmed by a prospective study.
### Owen et al. (1998a)

**Country:** Australia  
**Evidence level:** 2+

**Study design**  
Seven-month prospective cohort study.  
Setting: three acute adult psychiatric units in a general hospital and two units in a primary psychiatric hospital  
Population: 174 adult service users, 1,289 violent incidents.

**Aims of study**  
To establish predictive correlates of violence.

**Outcome measures**  
- Time of incident.
- Target of assault.
- Severity of assault.
- Method of attack.
- Outcome for service user and victim.
- Demographic information (staff and service user).
- Clinical data.
- Warning signs.
- Staff response.
- Impact of assault.
- Number of staff on duty.
- Years of experience (staff).
- Number of temporary or agency staff.

Three tools developed to measure these (the violence and aggression checklist, ward activity index and staff level index).

**Results**  
- Statistical significance set at $p<0.05$.
- Most incidents were directed against staff (1029/1289).
- Most incidents were preceded by warning signs, particularly agitation.

**Nursing practices**  
- Factor 1 ($p<0.001$) (number of staff on roster per occupied bed who: were female, without psychiatric training, with training in aggression, and students).
- Factor 2 negatively correlated with violence ($p=0.003$) (number of staff on roster who: were male, less than 30, senior nurses).
- Factor 3 ($p=0.02$) (staff absenteeism).

**Ward factors**  
- Factor 1 ($p<0.001$) (occupied beds, male service user, physically sick or disorientated, history of violence, increase security care area).
- Relative risk analysis revealed that younger service users (less than 25 years old) had the least risk of violence.

**Staff level**  
- Relative risk of violence increased with more staff, more non-nursing staff on planned leave, greater use of seclusion and more service users known to instigate violence, and more service users who were disorientated and more service users who were involuntary detained.

**Reviewer’s comments**  
- Authors defined aggression as any threatening or physical behaviour directed towards self or others. Violence was defined as any physical behaviour that resulted in harm to self or others.
- Authors note that the relationship between violence and staff in this study is unclear. The authors note that data is probably deficient, suggesting that occupational health data collection may need to be simplified.
- Authors note that level of statistical significance means that results are suggestive rather than definitive.
- Instrument reliability was not tested.
- This paper has the same population as Owen (1998b).
<table>
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</table>
| Owen et al. (1998b) | Seven-month prospective cohort study. | To assess differences between recidivist in terms of nature of incidents, warning signs and staff responses. | Demographic information. | Significant results for recidivists:  
- Older (p<0.001) and more likely to be widowed (p<0.001) and to suffer from organic brain disorders (male) and personality disorders (female) (p<0.001), more likely to be detained under Mental Health Act (p<0.001), more likely to be highly sedated prior to incident (p<0.001). More likely to commit serious incidents (p=0.02).  
- Displayed more warning signs, particularly agitation (p<0.001).  
- Occupational health and safety officers were notified less (p<0.01).  
Significant results for non-recidivists:  
- More likely to make verbal threats prior to assault (p=0.01). More likely to use a weapon (p<0.01), more likely to attack psychologists or social workers (p<0.02) or medical staff (p=0.01).  
- More likely to be secluded (p<0.01), receive extra medication (p=0.001), to be transferred to another hospital (p=0.02) and receive extra supervision (p<0.01). |

Reviewer’s comments  
- Recidivism was defined as 20 or more violent incidents by one person. Recidivist incidents tend to be under-reported. Accounted for 69% of all serious incidents.  
- Authors suggest that recidivist should be separated to reduce incidents in mainstream units.
### Source

<table>
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</table>
• Background variables.  
• Functional variables.  
• Environmental variables.  
• Living conditions.  
• Treatment.  
• Hospitalisation history.  
Service users rated as violent if nursing charts indicated physical aggression at least once every few months in the last year. | • 22.8% of service users were violent every few months.  
• Logical regression analysis suggested that the correlates of violence are: younger age (p=0.000), younger age at first hospitalisation (OR=0.98), poorer self-care, more frequent visitors, at least monthly (OR=0.97), and not having own clothing (OR=1.6), lower level of self-care functioning (OR=0.91), diagnosis of organic psychotic condition (OR=1.4). This model correctly classified 61.6% of violent group (sensitivity n=397/644) and 69.3% of the non-violent group (specificity n=1500/2165) overall correct predictive value=65%. |

### Reviewer’s comments
- Service users were defined as violent based on retrospective data, and then prospective analyses were carried out.
- Authors note that some recording bias may have occurred, but believe that it was not significant - other studies have however indicated a large reporting bias using nursing charts.
- Authors suggest that further studies needed to assess quantity and severity of violence, and clinical, treatment and environmental variables.
### Source
- **Raja et al. (1997)**

#### Country: Italy
- **Evidence level: 2+**

#### Study design
- Prospective cohort study.
  - Setting: 12-bed emergency psychiatric unit.
  - Population: 313 psychiatric in-patients.

#### Aims of study
To assess rates of aggression and to identify possible risk factors.

#### Outcome measures
- Age.
- Gender.
- Akathesia score.
- Violent behaviour.
- Hostility.
- Diagnosis.
- Medication.

#### Results
- Sex was not significant.
- Hostility or violence did not correlated with principal diagnosis, education, social class, GAF score, BPRS total score, MMSE score, akathesia, rigidity score, anticholinergic daily dose.
- Violence behaviour was related to younger age, BPRS hostility/agitation score, akathesia score, DZP daily dose, personality disorder.
- Number of service users with a personality disorder engaged in violent behaviour (p<0.001).
- Hostile behaviour was related to BPRS psychotic factor score, BPRS hostility/agitation score, CPZ daily dose, DZP daily dose.

### Reviewer’s comments
- Authors note that violence was relatively infrequent in this PICU - suggests that the unit policy which avoids seclusion and restraint contributes to this positively.
- Low prevalence of violent service users in this study - possibly due to cultural reform in Italy and features of PICU.
- A minority of service users had a substance related disorder.
Rasmussen & Levander (1996)  
Country: Norway  
Evidence level: 2-  

<table>
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</table>
|                         | 6.5-year retrospective cohort study | To assess the nature and correlates of violence.| • Violence.  
• Clinical variables.  
• Demographic variables.  
• Environmental variables. | • There were no seasonal patterns of violence.  
• Most violent acts were committed by women (p<0.001).  
• Six variables correlated with violence: positive psychotic symptoms, borderline symptoms, and assistance in daily care (positively correlated), age of service user, PCL-R score, and depressive symptoms (negatively correlated) (p 0.001). |

**Reviewer’s comments**  
- Incident forms were use to assess the violence incidents, therefore, these is a likelihood of recording bias.
### Study design
- One-year retrospective cohort study.
- Setting: acute adult psychiatric in-patient unit (three open, one locked ward).
- Population: 49 service users compared to all service users admitted (n=474) and random sample of non-violent service users (n=140).

### Aims of study
- To identify risk factors and correlates of violence.

### Outcome measures
- Date.
- Time.
- Place.
- Gender.
- Target of violence severity (rated by SOAS).
- Violence or aggression during index of admission.
- Psychiatric diagnosis according to ICD-10 criteria.
- History of violence.
- Substance misuse.
- Self-harm.
- Medication at discharge.

### Results
- Statistical analysis was applied to the outcome measures:
  - Gender was not significant.
  - Mean age of violent service users was 34.4 +/- 10 years all (39.6 +/- 13 years) compared with non-violent service users (40 +/- 13.2 years).
  - Mean length of stay was longer for violent service users (104.5 days +/- 83.6). Non-violent length of stay (31.2 days +/- 35 days).
  - Only dis-social and emotionally unstable personality disorders and comorbid diagnoses were significantly more prevalent in the violent group.
  - Violent service users were more likely to have:
    1. history of violence
    2. non-alcohol substance abuse
    3. behave aggressively before admission
    4. history of self-harm
    5. augmentation therapy
    6. more than one drug from a class of medication
    7. prescriptions for PRN, antipsychotics and benzodiazepines
    8. higher daily doses of anti-psychotics
    9. higher dosage of PRN, antipsychotics and benzodiazepines
    10. more medication changes
  - Logical regression identified 10, 7, 1, plus personality disorder and length of stay as predictors of violence (sensitivity=76%, specificity 97%, accuracy=92%, positive predictive value = 90%).
  - 10 & 7 alone (sensitivity=61%, specificity 96%, positive predictive value = 86%).
  - 1 alone (sensitivity=63%, specificity 85%, positive predictive value = 60%).
  - Peak incident times were between 5pm and midnight.
  - Clinicians' judgement better augmented by knowledge of risk factors.

### Reviewer's comments
- Authors note that a correlation between schizophrenia and violence was not found and speculate that lack of control groups in previous studies meant that these studies failed to account for the fact that schizophrenia is one of the most common diagnoses underlying admission to a psychiatric in-patient setting.
- Authors note that there was no negative correlation between depression and violence.
- Authors acknowledge possibility of under-reporting but attempted to correct for this by examining service user notes (two service users were added to violent group on this basis). Interviews with 30 service users and selected case notes discussed with clinical staff.
- Author acknowledges that data was not collected on precipitants and antecedents of violence.
- Although verbal abuse was not included in definition of aggression, service users who were verbally abusive were not included in the non-violent control group to avoid putting violent service users in the control group where under-reporting might have occurred.
- Seven service users committed 48.1% of all violent incidents.
Swett & Mills (1997)  
Country: USA  
Evidence level: 2+  

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</table>
| Swett & Mills | Five-month prospective cohort study.              | To evaluate the nurses' observational scale for in-patient evaluation (NOSIE), the brief psychiatric rating scale (BPRS), the mini mental state examination (MMSE) and other measures as predictors of in-patient assaults (physical contact with others and verbal/non verbal threats). | • Diagnosis (DSM-II-revised, medical records and professional consultations).  
• Demographic information.  
• Clinical ratings.  
• Assault.  
• Use of seclusion and/or restraint.  | • High score of the irritability scale of NOSIE (p<0.001) and failure to complete the MMSE correctly (P<0.001) predicted the occurrence or non-occurrence of assault 81% of the time using probit regression equation (specificity=85%, sensitivity=55%). When scores on total positive factor, total negative factor or total assets scale of NOSIE were substituted for irritability scale correct prediction for occurrence and non-occurrence of assault was 78-79%.  
• Irritability scale of NOSIE was the single best predictor.  
• Total scores on BPRS and MMSE were not significantly related to assault. |
| Country: USA  | Setting: state psychiatric hospital.              |                                                                                                                                                                                                             |                                                                                 |                                                                                                                                        |
| Evidence level: 2+ | Population: 335 acutely ill psychiatric service users. |                                                                                                                                                                                                             |                                                                                 |                                                                                                                                        |

Reviewer's comments
- Suggests that tools can aid clinicians to predict which service users will later engage in assault.
<table>
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</table>
| Yesavage (1983) | Cohort study. Setting: psychiatric intensive care unit.                      | To assess correlates of dangerous in-patient behaviour connected in bipolar illness. | • Risk factors.   | • Four factors recorded at admission predicted physical violence on that day or the succeeding seven days: history of severe childhood indiscipline; manic state; degree of psychosis (GPRS); and violence at admission.  
| Evidence level: 2- | Population: 40 service users with bipolar disorder                            |                                                                                |                  | • The total variance in assaults accounted for by the regression model was 0.63. |

**Reviewer’s comments**  
• Taken from RCPsych review.
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</thead>
<tbody>
<tr>
<td>Yesavage (1984)</td>
<td>Three-year prospective cohort study.</td>
<td>To assess correlates of violence for service users with schizophrenia during first eight days of admission.</td>
<td>Low neuroleptic serum levels. Degree of psychotic symptoms. Act leading to admission. Military combat experience. Childhood discipline.</td>
<td>Best correlates for in-patient assaults were: Low neuroleptic serum levels, violence prior to admission and schizophrenia rating on brief psychiatric scale ratings BPSR (p&lt;0.01).</td>
</tr>
<tr>
<td>Country: USA</td>
<td>Setting: PICU in veterans' medical centre.</td>
<td></td>
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<tr>
<td>Evidence level: 2-</td>
<td>Population: 70 adult male service users with schizophrenia (DSM-III criteria).</td>
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</table>

Reviewer's comments
- Author argues that the implication of these findings is that in-patients with low serum levels of their neuroleptic may become violent because of under-control of their core schizophrenic symptoms. He postulates that this usually appears in service users with command hallucinations who act on them unexpectedly.
### IV Structured clinical judgement

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</table>
| Belfrage et al. (2000) | 23-month prospective cohort study.                                        | To test the validity of the HCR-20 (version 2) and the PCL:SV in predicting future violence. | • Historical, clinical, risk management and psychotic variables as defined by the HCR-20 and the PCL:SV.                                                                                           | • Inter-rater reliability tested prior to study and found to be high.  
• Homogenous group with high HCR-20 scores (M=26).  
• 30/41 were diagnosed as psychopaths.  
• HCR-20 total had a high predictive validity (p=0.00), the historical subscale had a low predictive validity (p=0.10), clinical subscale had a good predictive validity(p=0.01), and the risk management subscale had the highest predictive validity (p=0.004).  
• Recidivists were older and had higher scores on part 2 of PCL:SV (p<0.1).  
• Psychopaths were assessed as a group using the PCL:SV. Risk management factors were the only significant risk factors amongst this group (p=0.02). |
| Country: Sweden  | Setting: two correctional maximum-security institutions.                    |                                                                               | • Homogenous group with high HCR-20 scores (M=26).  
• 30/41 were diagnosed as psychopaths.  
• HCR-20 total had a high predictive validity (p=0.00), the historical subscale had a low predictive validity (p=0.10), clinical subscale had a good predictive validity(p=0.01), and the risk management subscale had the highest predictive validity (p=0.004).  
• Recidivists were older and had higher scores on part 2 of PCL:SV (p<0.1).  
• Psychopaths were assessed as a group using the PCL:SV. Risk management factors were the only significant risk factors amongst this group (p=0.02). |
| Evidence level: 2- | Population: 41 randomly chosen long-term offenders with history of violent criminality mostly with antisocial personality disorder (DSM-IV). |                                                                               | • Homogenous group with high HCR-20 scores (M=26).  
• 30/41 were diagnosed as psychopaths.  
• HCR-20 total had a high predictive validity (p=0.00), the historical subscale had a low predictive validity (p=0.10), clinical subscale had a good predictive validity(p=0.01), and the risk management subscale had the highest predictive validity (p=0.004).  
• Recidivists were older and had higher scores on part 2 of PCL:SV (p<0.1).  
• Psychopaths were assessed as a group using the PCL:SV. Risk management factors were the only significant risk factors amongst this group (p=0.02). |

**Reviewer’s comments**
- Authors note that the results are not generalisable to other settings and need to be replicated.
- Authors note that follow-up period could not be standardised because of frequent transfers between the two institutions, and that follow-up therefore varied from one to 22 months (mean= eight months).
- Results of study were not available to inmates or staff during study, so did not influence risk management.
- Authors argue that lack of predictive validity of historical item is plausible in this group where almost all will have a high score for history of violence.
Violence: The Short-Term Management of Disturbed/Violent Behaviour in Psychiatric In-patient and Emergency Departments Guideline

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<tbody>
<tr>
<td>Doyle et al. (2002)</td>
<td>Retrospective comparative cohort study. Country: UK Evidence level: 2-</td>
<td>To assess whether three actuarial tools [psychopathy checklist: screening version (PSL: SV), violence risk appraisal guide (VRAG), historical part (H-10) of the historical/risk/clinical scheme (HCR-20) version 2, are able to predict violence 12 weeks after admission in the UK</td>
<td>• Clinical. • Demographic. • Historical factors (as covered in the three actuarial tools). Violence was defined as actual, attempted or threatened harm to others.</td>
<td>No significant difference in terms of: • age • gender • ethnicity • diagnosis category • violent/non-violent index offence • marital status.</td>
</tr>
</tbody>
</table>

**PSL:VL**
- Difference between violence and non-violent groups (p<0.0001).
- Using ROC analysis, prediction based on any violence and interpersonal subscale, AUCs p<0.001 AUCs for social deviance subscale p<0.001
- Predictive validity of deviance subscale p<0.001.
- Prediction of level 1 violence (violence against person or resulting in injury) p<0.01.
- 75% with a score >18 were violent at least once and the odds ratio of any violence was 4.
- Using cut of score >13 (sample mean) and MacArthur violence risk assessment study cut-off score of >12, OR= 3.5 and 5.4 respectively. At >12, sensitivity = 0.78, specificity =0.50 for any violence and sensitivity =0.88 and specificity =0.45 for level 1 violence.
- Those scoring 18 or over were exactly three times as likely to be violent.

**VRAG**
- Difference between violence and non-violent groups (p<0.001).
- AUC of the ROC for total score and VRAG bins (p<0.01). Showed significant predictive validity for level 1 violence. Using 5 as score cut-off (sample mean) OR=3.75, Phi coefficient p<0.01, using ROC analysis sensitivity =0.51 and specificity 0.76 for any violence.

**H-10**
- Difference between violence and non-violent groups (p<0.001).
- AUC of the ROC for any violence p=0.001), for level 1 violence p<0.05.
- Using cut-off score of 13 (sample mean) OR=3, phi coefficient p<0.05, sensitivity 0.75 and specificity 0.76 for any violence

All three tools correlated significantly even after controlling for psychopathy. PCL:SV social deviance subscale showed highest predictive accuracy for level 1 violence(p<0.001) It is significantly better than chance predictors. However VRAG had relatively poor predictive validity and H-10 had modern predictive validity.

**Reviewer's comments**
- Authors argue that PCL:SV is a useful measure for predicting short-term violence in UK medium-security environments for mentally disordered offenders. VRAG may not be valid for predicting short-term violence in this context. HCR-20 might have improved validity with other parts included (inappropriate for retrospective study).
- PCL:SV and interpersonal subscale were the best predictors of any violence while the social deviance subscale was the best predictor of level 1 violence.
- Authors argue that despite retrospective study design reliable ratings for the risk assessment tools were attained, but acknowledge that an additional personal interview may have improved the predictive accuracy of the tools.
- Author doesn't discuss how applicable tools are to all settings or how easy to use in prospective study.
### Study design

<table>
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<tr>
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<tbody>
<tr>
<td>Six-month prospective cohort study.</td>
<td>To test the predictive validity of the PCL: SV.</td>
<td>• Self-harm.</td>
<td>Four groups of variables were significant: self-harm, aggression, escape potential and treatment non-compliance.</td>
</tr>
<tr>
<td>Setting: state hospital.</td>
<td></td>
<td>• Aggression.</td>
<td>Aggression and treatment non-compliance had a significance of $r=.42$, $p &lt; 0.01$.</td>
</tr>
<tr>
<td>Population: 55 male forensic psychiatric service users</td>
<td></td>
<td>• Treatment non-compliance.</td>
<td>In predicting aggression, history of drug or alcohol abuse, and PCL:SV total were significant predictors.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Escape potential.</td>
<td>PCL:SV was reduced to presence or absence of psychopathy and was able to predict aggression (multiple $r=.69$, $R^2 = .48$, $\beta=.69$) and treatment non-compliance (multiple $r=.30$, $R^2 = .09$, $\beta=.30$).</td>
</tr>
</tbody>
</table>

### Reviewer’s comments
- Authors note that the follow-up time for each individual was not equal so number of incidences per variable was rated each month.
- Authors note that aggression towards others and self-harm appear to be completely unrelated ($r=-.05$).
- The results of this study would be generalisable in another setting.
### V Staff characteristics associated with violent incidents

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| Augestad & Vatten | Cross-sectional study.| To analyse the difference in risk of assaults on employees by service users according to gender, educational background and type of ward. | Ward annual record of employees.  
 Administrative information on employees.  
 Violent incident forms.                                                                 | 2,600 violent incidents were noted in this period.  
 Assaults did not peak at a specific time of the day or on a particular day of the week (p=0.15). There was no association with a particular month of the year (p=0.95).  
 Men were three times as likely to be assaulted as women (RR=3.06).  
 Employees with no formal psychiatric education had an extremely elevated risk of assault (RR=5.48).  
 Employees with no formal training were at a very high risk of assault within the maximum-security unit (5.5 times higher in one non-maximum security unit and almost 14 times higher than the other non-maximum security unit). |

### Reviewer's comments
- The authors argue that trained personnel should be preferred on wards where violence is most prevalent and that where untrained aids are necessary, contact time with service users should be kept to a minimum.
- The authors suggest that the difference in risk of assault between men and women requires further investigation. The authors note, however, that despite women's lower absolute risk of assault for each ward category, relative risk of assault according to ward type was similar for men and women.
- Authors note that there may have been some under reporting, but they argue that it will not affect the overall outcome of the results.
- Efforts were made to encourage staff to fill in 'violent incident forms'.
- This study is of reasonable quality.
**Violence: The Short-Term Management of Disturbed/Violent Behaviour in Psychiatric In-patient and Emergency Departments Guideline**

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</table>
| Binder & McNiel (1994) | Cross-sectional.        | To assess the relationship between staff gender and the risk of becoming a victim of assault (also taking account of professional discipline of staff victims). | - Gender.  
- Staff discipline (nurse, doctor etc.).  
- Violent assault (assessed using overt aggression scale - OAS).  
Analysis: chi-squared analyses and analyses of variance. | - Gender was not significantly associated with the risk of becoming a victim of violence for staff as a whole, doctors or nurses.  
- Staff discipline was strongly associated with risk of assault (p<0.0001).  
- Nurses were significantly more likely to be assaulted than doctors (p<0.00001). |

**Reviewer’s comments**

- Authors conclude that violent behaviour is an occupational hazard on acute psychiatric in-patient units.
- Authors note that a possible explanation of the high risk of assault against nurses relates to their interaction with service users.
- This study appears to be of a reasonable quality.
- Included in RCPsych evidence review.
### Study design
Five-year retrospective cohort study.

Setting: state forensic hospital (973-bed).

Population: 12 service users with thought disorder who had been involved in aggressive incidents.

### Aims of study
To compare the characteristics of psychiatrists who are assaulted with those who are not

- Age
- Experience (time since residency)
- Service to hospital
- Gender
- Board certification
- Foreign vs. North-American medical school
- Rate or injury

### Results
- Seven out of 54 psychiatrists were attacked. They tended to be: younger (p=0.0290), more recently out of residency (p=0.05).
- No other outcome measures reached significance.
- Rate of injury approximately 50% higher for male psychiatrists.
- Graduates from university-affiliated residencies were three times more likely to be injured than public-sector residencies (neither of these was significant).

### Reviewer’s comments:
- Authors note that results are complicated by the fact that young psychiatrists may be assigned to more difficult service users. Authors postulated that more experienced psychiatrists developed skills that enabled them to defused potentially assaultive situations.
- Authors note that personal characteristics were not examined and recommend further research.
- Included in RCPsych evidence review.
Cheung et al. (1997)

**Country:** Australia  
**Evidence level:** 2+

**Study design**  
Cross-sectional.  
Setting: large metropolitan psychiatric hospital - three short-term rehabilitation units, two locked wards (for chronically aggressive service users), four long-stay wards and two wards for service users with brain trauma.

**Population:** staff n=279 service users n=220 (majority of service users had schizophrenia unresponsive to neuroleptic treatment).

**Aims of study**  
To determine the prevalence and features of assaults on staff compared to other aggressive incidents (such as attacks on furniture, other service users, against self) by psychiatric in-patients, and their relationship with ward atmosphere.

**Outcome measures**  
- Aggressive behaviour (measured by staff observation aggression scale SOAS and formal incident report).
- Ward atmosphere (measured by ward atmosphere scale - WAS).

Groups means were compared using ANOVA.

**Results**  
- There were 477 assaults on staff, 181 physical assaults. There were 329 aggressive incidents not involving staff. There were only 53 formal incident reports.
- Most assaults on staff (verbal and physical) were triggered by staff-service users interaction - 69.9%. (Measured by SOAS and formal incident reports).
- About one-third of the staff had significant psychological reactions to the assault (34.8%).
- Service users were more likely to be provoked and used more severe means of aggression against staff that against other targets of aggression such as other service users and furniture.
- Aggression was less likely to have precipitating factors when staff not involved (p<0.001).
- There were no significant differences between characteristics of service users who assaulted staff and those who had other targets of aggression (such as furniture).
- There was no significant correlation between the number of staff assault as indicated by SOAS and the real WAS scores or the ideal WAS scores.

**Reviewer’s comments**  
- Authors comment that the existence of precipitants in attacks on staff means that they may be more predictable than other violent incidents such as attacks on furniture, etc.
- Authors also note that staff were better able to deflect attacks than service user victims, even though the severity was greater. They attribute this to training.
- Authors noted that only a few service users were responsible for the majority of the attacks - they argue that such service users should be carefully monitored. They suggest that this would be cost effective, but give no figures.
- This study was of reasonable quality.
### Study Design: Chou et al. (2001)

**Country:** Taiwan  
**Evidence level:** 2+

- **Seven-month prospective study.**  
- **Setting:** Four acute wards in psychiatric hospital.  
- **Population:** 238 psychiatric inpatients.

**Aims of Study:**
- To identify patterns and severity of assaults amongst psychiatric inpatients.  
- To assess whether assaults are related to service user, environmental or nursing staff factors.

**Outcome Measures:**
- Environmental (assessed by environmental assessment questionnaire).  
- Assaultiveness (assessed by OAS and SOAS).  
- Diagnoses (DSM-IV).

Patient characteristic form (PCF) was also used.

**Results:**
- Violent incident ratings were checked for effects of under-reporting - no bias was found.
- **Service user risk factors:**
  - History of assault (OR=3.98)  
  - Diagnosis of psychotic disorder (OR=2.08)  
  - Time since admission (OR=0.99)  
  - History of smoking (OR=1.46).

- **Environmental risk factors:**
  - Partial correlation confirmed that the severity of the assaults (SOAS) was associated with:
    - Spatial density of location (p<0.01)  
    - Patient/staff ratio (p<0.01).

- **Characteristics of assaulted staff:**
  - Younger age (OR=0.20)  
  - Less work experience (OR=11.70)  
  - Less training in prevention and management of assaults  
  - Involved in conflict with service users (limit setting etc.).

**Reviewer’s comments:**
- Authors note that more research is needed before these results could be generalised to other hospitals in Taiwan.  
- Authors note that most assaultive service users had schizophrenia, however, most of the service users included in this study had schizophrenia.  
- Well thought out study, good analysis.
## Source

<table>
<thead>
<tr>
<th>Coverdale et al. 2001</th>
</tr>
</thead>
</table>

### Study design

- Survey.
- Setting: medical school.

### Aims of study

To measure the incidence of threats and acts of violence by service users against training physicians.

### Outcome measures

- Violence (assault, threats, damage to property).
- Training.
- Incident reporting.
- Psychological impact (none, minimum, moderate, severe). These results were assessed using the impact of events scale.

### Results

- 84% response rate.
- 67% had been threatened, 54% had been verbally intimidated, 41% had witnessed damage to property in their presence, 39% had been physically assaulted.
- Psychiatry trainees were significantly more likely to experience threat or violence than other training physicians.
- Females were more likely to report sexual harassment than men (p<0.001).
- Overall mean on impact of event scale of most distressing incident = 8 (described by 90 participants). The range of this tool is not given.
- Only once was a trainer informed about distress associated with a violent incident.
- 70% of trainees had no training in the management of violence.

### Reviewer’s comments

- Authors stress that these findings highlight the need for training.
- Whilst the majority of the participants were psychiatry trainees, these results underscore the need for training for psychiatric doctors, who, as trainees, are significantly more likely to suffer some type of assault (verbal or physical) or witness acts of aggression that other trainees. Although 62% of the psychiatry trainees received training in the management of violence, this still left many who had experienced no training at all. Out of all those who had received training (30% of all participants) only 36% viewed it as adequate.
- This study was of reasonable quality, but the retrospective application of the impact of events scale to the 4-point responses from the questionnaire seems questionable.
### Study design
- **Flannery Jr. et al. (2001)**
  - **Country:** US
  - **Evidence level:** 2-

#### Aims of study
- To assertion characteristic of staff most likely to be victims of violence.

#### Outcome measures
- Demographic characteristics (assess from assault staff action program ASAP).

#### Results
- In in-patient settings gender was not significant for the last five years.
- Mental health workers and nurses were at greatest risk of assault.
- Overall, less senior male mental health workers with less formal education were most at risk.
- Symptoms of ASD (acute stress disorder) were noted.

#### Reviewer’s comments
- Authors argue that ASAP has reduced the amount of ASD, but note the need for a properly randomised trial.
- Authors note that male mental health workers who were victims of physical assault were most likely to decline ASAP, arguing that violence came with the job.
### Lanza et al. (1997)

**Country:** USA  
**Evidence level:** 2-  
**Study design:** Six-month prospective cohort study.  
**Setting:** Neuro-psychiatric dept in veterans affairs hospital (locked, rehabilitation and geriatric treatment).  
**Population:** Adult psychiatric users (not reported).

**Aims of study**  
To assess whether there is a direct relationship between service user/staff ratio and assault.  
To assess whether nursing gender affects assault.

**Outcome measures**  
- Assaults (rated by assault rating scale).  
- Environment (rated by ward mood scale).  
- Staff demographic information.  
- Unit shift.  
- Patient/staff ratio.

**Results**  
- No relationship was found between staff/patient ratio or staff gender and assault.  
- The only significant findings were the relationship between unit, time of day and assault status (p<0.001).

**Reviewer’s comments**  
- Authors note that these results are not generalisable.
### Source
Soares et al. (2000)

<table>
<thead>
<tr>
<th>Study design</th>
<th>Aims of study</th>
<th>Outcome measures</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Questionnaire survey. Setting: both psychiatric in-patient and outpatient (over 50% in-patient) across eight districts in Stockholm. Population: 731 psychiatric nurses and 320 psychiatrists.</td>
<td>To assess the extent, nature and determinants of violence against psychiatric nurses and psychiatrists.</td>
<td>Working conditions (for example, does your job demand too much work from you?). Physical and psychological environment (for example, does your job require lifting heavy objects?). Quality of care (for example, are you satisfied with the quality of care you provide?). Organisation (for example, are the goals of the organisation clearly expressed?). Violence and discrimination (for example, have you ever been exposed to violence at work?). Social network and support (for example, do you have support from your colleagues?). Changes and future (for example, have staff ever considered leaving present job?). Health conditions (for example, how many days have you been absent due to sick leave?). Lifestyle (for example, how much alcohol consumed?). Coping with 'too much work' (for example, is it unavoidable?). (Violence described as verbal or physical)</td>
<td>Nurse response rate = 67.1%. Psychiatrists response rate = 69%. 85% reported exposure to violence during their career (62.4% reported it occurring several times). Victims of violence differed significantly in the following ways: non-victims concerning demographic (younger p&lt;0.001), more likely to work in in-patient settings, had less staff supervision (p&lt;0.001), were less satisfied with their salary (p&lt;0.05), complained of insufficient lighting, poor ventilation (p&lt;0.001) and noise (p&lt;0.001), were involved in heavy lifting at work (p&lt;0.001), found their psychological environment taxing (p&lt;0.005), had less influence in their job (those with a lot of influence reported less abuse p&lt;0.01 and reported their work site as pleasant p&lt;0.005), felt restless (p&lt;0.05), felt less proud of their organisation (p&lt;0.005), stated that their work was affected by a lack of resources (p&lt;0.05). Stepwise regression analyses identified age (p&lt;0.005), working experience (p&lt;0.001), physical (p&lt;0.05) and psychological working environment (p&lt;0.005) and organisational enhancement (p&lt;0.05) to be significantly associated with violence.</td>
</tr>
</tbody>
</table>

### Reviewer’s comments
- Authors argue that the care environment is significantly correlated with violence in mental health care settings.
- Authors note that the study findings may not be generalisable to rural or semi-rural settings.
- Authors note that the cross-sectional self-selecting design is a weakness, but still argue that the results provide useful information about personal factors associated with violence.
- This study was of reasonable quality.
### Source

<table>
<thead>
<tr>
<th>Source</th>
<th>Study design</th>
<th>Aims of study</th>
<th>Outcome measures</th>
<th>Results</th>
</tr>
</thead>
</table>
| Whittington (1994a) | Cross-sectional. | To assess whether nurses' behavioural reactions following an assault contribute to the risk of further assaults occurring. | • Levels of ward violence (measured by 28 day census).  
• Availability of nurses.  
• Talking/listening by nurses.  
• Physical contact with (touching) service users.  
• Rejecting comments made by nurses to service users.  
Measured by direct observation schedule (DOS). | • Good inter-rater reliability was achieved for the DOS instrument on all outcome measures.  
• Violent wards were characterised by higher rates of touching and higher rates of availability (although this might be accounted for by times of observations). They also talked and listened to service users less.  
• Assaulted staff were not differentiated either in term of talking/listening or use of rejecting statements (p>0.05). They did however, touch service users more and were more available (p<0.02).  
• Authors note that a previous study conducted in the same setting indicated that most attacks happen between 1300-1400h. The time period when this study suggests there is least interaction with nurses.  
• Nurses who were most at risk in the previous study (charge nurses) were those in this study who were most available to service users, but who spent the least time listening and talking. The opposite was true of enrolled nurses - the previous study revealed them to be the least likely group of nurses to be assaulted. The study does not address who touched the service users most often. |

### Reviewer's comments

- Authors acknowledge that violent and non-violent wards were observed at different times of the day and that variability in nursing practices may confound the results.
- Authors acknowledge that the cross-sectional design is a weakness as it means that nurses may have been observed either before or after they were assaulted - making judgements about the effects of assault on nursing behaviour difficult. It is not therefore possible to establish whether touching was a cause or an effect of violence.
- Authors note that no relationship was shown between verbal hostility and violence.
- Results not very clear. Some evidence of association between interaction and violence.

Country: UK  
Evidence level: 2-  
Setting: adult wards of large psychiatric hospital.  
Population: 103 nurses (various grades).
<table>
<thead>
<tr>
<th>Source</th>
<th>Study design</th>
<th>Aims of study</th>
<th>Outcome measures</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whittington &amp; Wykes (1994b)</td>
<td>Cross-sectional.</td>
<td>To assess whether assaulted staff had distinctive characteristics.</td>
<td>Age.</td>
<td>Significant variation between staff and service user involvement in assaults (p&lt;0.05).</td>
</tr>
<tr>
<td>Country: UK</td>
<td>Setting: 13 wards across two psychiatric teaching hospitals.</td>
<td>To determine whether staff and service user characteristics were often combined in victim-assailer pairings.</td>
<td>Sex.</td>
<td>No significant difference between nurses involved in one incident and nurses involved in more than one incident.</td>
</tr>
<tr>
<td>Evidence level: 2-</td>
<td>Population: 65 assaulted nurses, 136 non-assaulted nurses.</td>
<td></td>
<td>Height.</td>
<td>Significant difference between grade (p&lt;0.05) and age (p&lt;0.001).</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Weight.</td>
<td>Ethnic origin and risk-taking not significant.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Ethnic origin.</td>
<td>Most repeated assaults involved same victim and assailant (82%).</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Grade.</td>
<td>Aggressors tended to be older and smaller.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Personality - risk taking (only assaulted nurses).</td>
<td>Relationship between sex of victim and assailant didn't quite reach significant (p=0.07).</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Historical controls used.</td>
<td>Significant difference in age of grades (p&lt;0.001), but, excluding student nurses, assaulted nurses had lower mean age.</td>
</tr>
</tbody>
</table>

Reviewer's comments
- Assaults were identified by authors' daily contact with wards.
- Information on control group gained from hospital records, whilst information from assaulted group gained from interviews and self-administered forms.
- Personality of assaulted nurse weighed against historical control (used impulsiveness questionnaire).
- Authors stress the importance of the negative findings concerning a relationship between staff characteristics and assault.
- Authors argue that the relationship between repeat offences by service users on particular staff is perhaps indicative of a problematic relationship, rather than generalisable characteristics.
- No clear results identified.
#### VI Service user perspectives on warning signs, risk factors and prediction

<table>
<thead>
<tr>
<th>Source</th>
<th>Study design</th>
<th>Aims of study</th>
<th>Outcome measures</th>
<th>Results</th>
</tr>
</thead>
</table>
| Johnson et al. (1997)   | One to four interviews. Setting: two hospitals (289-bed tertiary care provincial psychiatric hospital and a 24 bed psychiatric unit in a general hospital). Population: 12 service users with thought disorder who had been involved in aggressive incidents. | To understand the experiences of thought disordered individuals which precede an incidence of aggression, | • Baseline experiences of stress and upset.  
• Stress and upset (thoughts and feelings connected with aggressive incidents). | Participants felt that they:  
• were strongly affected by the external environment (hospital, people and policy)  
• both powerful and powerless  
• only had control over their aggressive action up to a point.  
Although they had used strategies in the past to control their anger, for some reason they hadn’t used them or they hadn’t been effective.  
Thought disorder seemed to have negligible influence on aggression in most cases (two mentioned internal state). |
| Country: Canada         |                                                                              |                                                                                |                                                                                  |                                                                                                  |
| Evidence level: 2-      |                                                                              |                                                                                |                                                                                  |                                                                                                  |

**Reviewer’s comments**
- Authors note that although only a small sample it was fairly heterogeneous (race, gender, age diagnosis).
- Authors were surprised by the small number of incidents during the study and wondered whether the interest shown in the service users had had a mitigating and therapeutic effect.
- Authors recommend better communication between staff and service users to prevent aggression.
- Study needs to be replicated on a larger scale.
### VII Staff perspectives on warning signs, risk factors and prediction

<table>
<thead>
<tr>
<th>Source</th>
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<th>Outcome measures</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gim et al. (1999)</td>
<td>Questionnaire.</td>
<td>From a nurse’s point-of-view to identify:</td>
<td>• Aim 1 and 2 were assessed using a 5-point ordinal scale.</td>
<td>91% response rate. Statistical analysis was used on questionnaires and five categories of causes of violence were identified, namely:</td>
</tr>
<tr>
<td>Country: Singapore?</td>
<td>Setting: state psychiatric hospital (Woodbridge).</td>
<td>• precipitants of violence</td>
<td>• Aim 3 was assessed using a visual analogue scale rating.</td>
<td>- service user-staff conflict</td>
</tr>
<tr>
<td>Evidence level: 2-</td>
<td>Population: 183 registered nurses with at least one year’s experience in a mental health setting.</td>
<td>• effectiveness of common preventative strategies</td>
<td>• Age, gender, level of qualification and experience were also considered.</td>
<td>- staff enforcement of rules</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• ability to predict.</td>
<td></td>
<td>- service user’s requests not met</td>
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<td></td>
<td></td>
<td></td>
<td>- service user-patient conflict</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>- mental status.</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Psychiatric trained staff placed significantly more emphasis on smoking, relatives not visiting, hallucinations, mania, and substance abuse or withdrawal. (p&lt;0.01).</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Strategies for management of violence were generally agreed upon but psychiatric trained nurses placed significantly more emphasis (p&lt;0.01) on issues that respected the service user.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• All but four respondents were confident that they could predict violence. Male nurses were significantly more confident (p&lt;0.05). All felt unable to predict accurately with new service users.</td>
</tr>
</tbody>
</table>

**Reviewer’s comments**
- Results are based on nurses’ opinions only.
- Authors note that younger nurses favoured medication rather than restraint, and suggest that this may reflect training.
- Study design does not allow nurses’ opinions about risk factors and their ability to predict aggressive incidents to be validated.
### Study design

<table>
<thead>
<tr>
<th>Source</th>
<th>Study design</th>
<th>Aims of study</th>
<th>Outcome measures</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>O'Sullivan &amp; Meagher (1998)</td>
<td>Survey. Setting: in-patient. Population: 178 psychiatrists and trainees in the Dublin area.</td>
<td>To assess factors associated with attacks on psychiatrists by their service users.</td>
<td>• Demographic characteristics (psychiatrist and service user). • Experience. • Speciality at time of assault. • Nature of assault. • Management responses.</td>
<td>• 82.5% response rate. • 38.8% had experienced an assault. • No significant demographic characteristics were identified amongst psychiatrist assaulted. • Trend towards safety in the 45-54 year group. • Most service user assailants were male, acquainted with their doctor. Those with personality disorder, schizophrenia and substance abuse were the most likely assailants. • Assaults more likely in general adult settings than child psychiatry. • Most assaults occurred during working hours with a peak between 11-12am, in open settings when the doctor was not alone (time of maximum decision-making). • In 59% of cases, assaults resulted in a change to service user management. • Only 10% of respondents had received training in violence management. • Assault anticipated in 39% of cases.</td>
</tr>
</tbody>
</table>

### Reviewer’s comments
- Authors note that the issue of violence is a serious one amongst psychiatrists, suggesting an even higher level amongst nurses.
- Authors note limitations of questionnaire approach - major incidents are the most likely to be recalled.
- Authors note a reverse to the trend noted by Reid WR (1989), with fewer attacks in child psychiatry and more in general adult psychiatry.
- Assaults tended to occur in open settings. However the percentage of service users and percentage of open unit assaults were not recorded.
<table>
<thead>
<tr>
<th>Source</th>
<th>Study design</th>
<th>Aims of study</th>
<th>Outcome measures</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whittington &amp; Wykes</td>
<td>Semi-structured questionnaire interviews.</td>
<td>To assess the frequency with which violence in psychiatric in-patients was preceded by aversive interpersonal stimulation.</td>
<td>• Frustration. • Activity demand. • Insulted, threatened. • Perceived attack (initiated physical contact or approached service user). Categories were not mutually exclusive. Reliability was checked in interviews with service users and witnesses.</td>
<td>• 86% of assaults were preceded by nurse delivering aversive stimulation. • 82.6 % agreement about aversive stimulation between staff witnesses and service users (there was moderate agreement on the type of aversive stimulation). • 44% of assaults involving service users with schizophrenia occurred in the absence of aversive stimulation (compared with only 2% with other diagnoses. (p=0.0005)). However, all committed by same individual. • All 15 assaults committed by OBS service users followed physical contact compared to 61% of manic-depressive service user and 25% of schizophrenic service users (p=0.006). • 67% of attacks by service users with manic-depressive disorder followed activity demand compared to 31% if schizophrenic service users and 76% of OBS service users. (p=0.003).</td>
</tr>
<tr>
<td>(1996)</td>
<td>Country: UK Evidence level: 2-</td>
<td></td>
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</tbody>
</table>

**Reviewer’s comments**
- Authors conclude that interpersonal factors and diagnosis seem to play a significant role in violence in psychiatric hospitals.
- Sample size is too small for results to be generalisable.
## 5.3 Training

<table>
<thead>
<tr>
<th>Source</th>
<th>Study design</th>
<th>Aims of study</th>
<th>Outcome measures</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beech (1999)</td>
<td>Before and after.</td>
<td>To discover student views of training course on short-term</td>
<td>• Used an adaptation of form from Collins 1994 (attitudes towards aggression</td>
<td>• Author argues that students found the module relevant interesting and useful, but offer only</td>
</tr>
<tr>
<td>Evidence level: 2-</td>
<td>patient.</td>
<td></td>
<td>Follow-up only immediately after course.</td>
<td>• After the course, students demonstrated a more informed attitude towards service user violence</td>
</tr>
<tr>
<td></td>
<td>Population: 58</td>
<td></td>
<td></td>
<td>and a more positive attitude about their ability to deal with violence. The author notes that</td>
</tr>
<tr>
<td></td>
<td>student nurses.</td>
<td></td>
<td></td>
<td>certain issues reached statistical significance, such as the nurses’ confidence to manage</td>
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<td></td>
<td>verbal aggression (p=0.0000) and a belief that they are able to protect themselves using</td>
</tr>
<tr>
<td></td>
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<td></td>
<td></td>
<td>reasonable force (p=0.0000).</td>
</tr>
</tbody>
</table>

**Reviewer’s comments**
- There was no randomisation. The students were trained in groups, but there is not reference to any differences between the groups. There is no long-term follow-up. It is unclear how much experience of working in a mental health environment these students would have after only eight months of training. Restraint training is not part of this package, only breakaway techniques.
- There is no evaluation of the effectiveness of the training, except student feedback, and this is not systematically reported, opening the possibility of bias.
### Study design

- **Source:** Bournemouth University (unpublished)
- **Country:** UK
- **Evidence level:** 2-

#### Study design
- Cross-sectional pilot.
- **Setting:** psychiatric intensive care unit.
- **Population:** 22 nursing staff.

#### Aims of study
To survey physical techniques used to manage violence and their effectiveness.

#### Outcome measures
- Adverse incident reports.
- Semi-structured staff interviews.

#### Results
- 346 adverse incident reports were examined.
- 19/22 nursing staff were interviewed.
- The use of breakaway techniques was not reported in adverse incident forms. However, 17 attacks in the last three years. Five staff defended themselves, three used recognised breakaway techniques, one a restraint technique and one a method not taught.
- 18/19 staff stated that they had been directly involved in restraining a client.
- None stated that techniques had been ineffective or inappropriate.
- Problems were noted with taking the client to the floor.
- All staff interviewed had received C&R and breakaway training within the last two years.
- There was a high degree with training courses, but all wanted more frequent refresher courses.
- Five staff stressed the need for more emphasis on de-escalation skills during training.

#### Reviewer’s comments
- This study was a pilot study.
- Self-reported data.
- Design cannot assess effectiveness.
### Study Design

**Source:** Calabro et al. (2002)
**Country:** US
**Evidence level:** 2-

**Study design:** Before and after study.
**Setting:** In-patient.
**Population:** 180 hospital staff (registered nurses, hospital aids, activity therapists, social workers and individuals who admit service users).

**Aims of study:** To assess two commercial training programmes: the ‘non-violent crisis intervention’ (CPI) and ‘handle with care’.

**Outcome measures:**
- Knowledge of four crisis development behaviour levels (anxiety, defensive behaviours, acting-out behaviours, tension reduction).
- Attitude
- Self-efficacy.
- Behavioural intention.

(All were measured using instrumentation tailored to the participants. Responses used 5-point Likert scale).

**Results:**
- 118/180 responses were used for results (other staff did not take part in either pre or post test or did not code their responses properly).
- There was a significant increase in mean post-test knowledge scores ($p<0.001$).
- There was a significant positive changed of attitude towards using the techniques in the post-test ($p<0.001$).
- There was a significant positive improvement in self-efficacy post-test ($p<0.01$).
- Behavioural intention showed a positive change post-test ($p<0.05$).

**Reviewer’s comments**
- This study had some quality concerns, but they were not overwhelming. There was no control group (making the improvement difficult to assess) and the study also includes populations outside the scope of this guideline (staff who work in geriatric, children, adolescent and substance abuse settings). There was also no long-term follow-up and no assessment of techniques in a clinical environment. A pilot study was conducted beforehand and the instrumentation was reviewed by experts in the field.
- No evaluation was made of ‘handle with care’ in this study due to time constraints, despite this being stated in the aims.
### Study design
- **Aims of study**: To assess whether ward compliance with training impacts on the number of injuries to staff.
- **Outcome measures**:
  - Number of aggressive incidents by ward.
  - Injury reports (includes death, loss of consciousness, restriction of work or motion, termination of employment, medical treatment - other than first aid - transfer to another job, and lost work days).
  - Training compliance in managing assaultive behaviour and in CPR

### Results
- Out of the 27 wards, 18 had low training compliance and nine had high training compliance.
- No significant relationship was found between high compliance and the number of aggressive incidents on the ward.
- In relation to high and low compliance wards there was a significant relationship between assaultive behaviour training and number of staff injuries (p<0.005). CPR training did not significantly affect the number of injuries.
- When individual staff were considered, those compliant with assaultive behaviour training were significantly less likely to be injured than those not compliant with this training (p<0.05).
- When individual staff were considered, those compliant with CPR training were significantly less likely to be injured than those not compliant with this training (p<0.001). Far more staff were compliant with CPR training (602) than assaultive behaviour training (392).

### Reviewer’s comments
- This study was of reasonable quality. However, the retrospective nature of the study and the use of injury reports means that there is likely to be under-reporting. This variable was not subject to control.
- Included in RCPsych evidence review.
**Source** | **Study design** | **Aims of study** | **Outcome measures** | **Results**
--- | --- | --- | --- | ---
Chaimowitz & Moscovitch (1991) | Cross-sectional. Setting: medical schools. Population: 211 psychiatric residents. | To assess training provision among psychiatric resident medical officers. (Other outcome measures were considered, but they are not reported here, as this review focuses on training). | • The response rate was 64.5%. Four further questionnaires were excluded because the residents were not living in Canada. • 52.5% of responders had received training in dealing with violence. • When asked about training, 34.4% thought that staff psychiatrists were adequately trained to deal with violent incidents; 24.4% thought that psychiatric residents were adequately trained to deal with violent incidents; 50.4% felt that nurses were adequately trained to deal with violent incidents; 79.5% wanted improvements in education and training for staff. |

**Reviewer’s comments**
- The survey is of reasonable quality, although the response rate is low. There is no evidence that the questionnaire was piloted prior to use.
<table>
<thead>
<tr>
<th>Source</th>
<th>Study design</th>
<th>Aims of study</th>
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<th>Results</th>
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</thead>
<tbody>
<tr>
<td>Clinton et al. (2001)</td>
<td>Cross-sectional.</td>
<td>To identify education and training needs of psychiatric intensive care staff.</td>
<td>Questionnaire.</td>
<td>• 39% response rate at conference. 9/13 PICU ward managers.</td>
</tr>
<tr>
<td>Country: UK</td>
<td>Setting: PICU conference and PICU ward managers. Population: 130 conference delegates, 13 ward managers.</td>
<td></td>
<td></td>
<td>• The following areas were identified as necessary for course content: management of aggressive and violent behaviour, including, de-escalation, control and restraint, seclusion (and alternatives) and debriefing (71%). Intervention strategies, including family therapy, anger management (42%). Engagement/communication skills (19%) Rapid tranquilisation and medication training (27%), legal issues (22%), safety and security (25%), risk assessment and management (20%).</td>
</tr>
<tr>
<td>Evidence level: 2-</td>
<td></td>
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<td>• 44% stated that they would prefer specific PICU training courses rather than generic mental health courses.</td>
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<td>• 46% wanted degree level training.</td>
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<td></td>
<td>• 81% stated they would attend a course if it existed. Only 17% were aware of relevant courses in their locality.</td>
</tr>
</tbody>
</table>

Reviewer’s comments
- Low response rate.
- Ungeneralisable.
- The questions appear to have been very wide-ranging (example of questionnaire not provided).
- No mention of the questionnaire having been piloted prior to the study.
## Study design
- **Source:** Collins (1994)
  - Country: UK
  - Evidence level: 2-

### Aims of study
- To assess changes in nurses’ attitudes towards aggressive behaviour, following attendance at a training day.

### Outcome measures
- Attitudes toward aggressive behaviour questionnaire administered before and after the programme, and at six months.

**This study assesses ‘The prevention and management of aggressive behaviour programme’ (PMAB).**

### Results
- The author argues that the results show a movement in a positive direction.
- More nurses felt that some level of prediction of service user violence was possible both immediately following and six months after the programme.
- There was a shift away from the view that service users were entirely responsible for their own behaviour both after the course and six months later.
- There was a greater acknowledgement that other factors, such as fear, might lead to service user violence directly following the course. However, there was less agreement about this after six months.
- There was a decline in staff fear when faced with aggression immediately after the course. It remained at the six-month point.
- The belief that staff should expect to be attacked declined immediately after the course and at the six-month point. However, while registered nurses moved from agreement to disagreement, more non-registered nurses moved towards agreement.
- All staff agreed with the need for skilled interventions to manage incidents. This did not alter after the course or at the six-month point.
- Staff confidence increased in both registered and non-registered nurses immediately after the course and at the six-month point.

### Reviewer’s comments
- The author notes that changes over the six-month period may have resulted from other variables.
- The assessor of the questionnaire was blind to the student (three digit codes were assigned and the log was held by another lecturer).
- Test/retest reliability was checked with another group of students ($r=0.972$).
- The sample size was too small for any statistical analysis to be conducted. The sample was not random. The conclusions comment on issues not tested in the study. Despite these concerns the study was of reasonable quality.
<table>
<thead>
<tr>
<th>Source</th>
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</thead>
<tbody>
<tr>
<td>Coverdale (2001)</td>
<td>Cross-sectional survey.</td>
<td>To assess threats and acts of violence by service users against training physicians.</td>
<td>• Violence (assault, threats, damage to property). &lt;br&gt;• Training. &lt;br&gt;• Incident reporting. &lt;br&gt;• Psychological impact (distressing event scale).</td>
<td>• 84% response rate. &lt;br&gt;• 67% had been threatened, 54% had been verbally intimidated, 41% had witnessed damage to property in their presence, 39% had been physically assaulted. &lt;br&gt;• Psychiatry trainees were twice as likely as other medical trainees to experience threats or violence. &lt;br&gt;• Females were more likely to report sexual harassment than men (p&lt;0.001). &lt;br&gt;• Overall mean on distressing event scale of most distressing incident = 8 (described by 90 participants). &lt;br&gt;• Only once was a trainer informed about distress associated with a violent incident. &lt;br&gt;• 70% of trainees had no training in the management of violence.</td>
</tr>
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<td>Evidence level: 2-</td>
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</table>

**Reviewer’s comments**

- Authors stress that these findings highlight the need for training.
- Whilst the majority of the participants were psychiatry trainees, these results underscore the need for training for psychiatric doctors who, as trainees, are significantly more likely to suffer some type of assault (verbal or physical) or witness acts of aggression that other trainees. In almost all incidents the percentage was more than double that of other trainees, with the exception of verbal threats, where the next highest group (surgery) was 75% compared to 91% of psychiatry trainees. Although a larger percentage of the psychiatry trainees received training in the management of violence (62%), this still leaves many who had experienced no training at all. Out of all those who had received training (30% of all participants), only 36% viewed it as adequate.
### Frey and Weller (2002)

**Country:** US  
**Evidence level:** 2-

**Study design:** Before and after (pilot study).  
**Setting:** Psychosocial rehabilitation unit (in-patient).  
**Population:** 10 male service users.

**Aims of study:** To increase respect for service users, peers and staff through training to reducing aggressive and violent responses.

**Outcome measures:**
- Service user 12-item questionnaire (before and after study).
- Nurse questionnaire (filled in by service user’s primary nurses - blind to purpose of training). Questionnaires completed before and one week after study.
- Psychiatric technician questionnaire (filled in by service user’s primary psychiatric technician - blind to purpose of training). Questionnaires completed before and one week after study.

**Results:**
- Service user questionnaire showed increased service user knowledge after test (mean score p<0.05).
- Nurse survey showed decreased aggressive behaviour one-week post test (p<0.05).
- Results of psychiatric technician survey not reported.
- Authors’ claim that staff behaviours altered once they realised the causes of service user aggression (but no data is given).

**Reviewer’s comments**
- This is a pilot study. There are a large number of possible confounders that are not considered, such as whether reduction of violence resulted from changing staff behaviour rather than service user training. The results are not reported in enough detail. There is not control. There is not enough information in the study for the conclusions that are put forward. This study is included as it is the only one identified in our searches that examines the effects of training service users, rather than staff.
<table>
<thead>
<tr>
<th>Source</th>
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<th>Outcome measures</th>
<th>Results</th>
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<tbody>
<tr>
<td>Goodykoontz &amp; Herrick (1990)</td>
<td>Before and after study. Setting: psychiatric unit. Population: 36 staff members.</td>
<td>To evaluate a training programme for dealing with aggressive behaviour (included cognitive, emotional and psychomotor needs).</td>
<td>Evaluation forms.</td>
<td>27/36 staff completed the course. Those who completed it stated that they: - felt more confident in their ability to handle violent situations and had a plan of how to proceed - preferred demonstrations of techniques to videos of them - would like debriefing after incidents - would like more training. Fewer incidents were reported in the four-month period following training. Staff stated that they were more likely to intervene than wait for hospital security.</td>
</tr>
</tbody>
</table>

**Reviewer’s comments**

- There are several quality related issues. It is not clear how many evaluation forms were completed. No primary results were offered, only themes. No mention is made of how the themes were analysed.
- Confounders that may have affected the number of incidents subsequent to training are not considered. The number of incidents was based on ward incident forms. There was a significant dropout rate from the course. It is not clear what percentage of the unit engaged in training and whether previous training had taken place.
## Ilkiw-Lavalle et al. (2002)

**Country:** Australia  
**Evidence level:** 2+

### Study design
- **Before and after study.**
- **Setting:** Four mental health units.
- **Population:** 103 mental health staff (42 nurses, 18 allied and medical staff and 37 ancillary staff).

### Aims of study
- To assess improvements in staff knowledge as a result of training.

### Outcome measures
- 14-item knowledge test.
- Programme evaluation questionnaire.

**Training was compulsory.**

### Results
- 37% of staff had never participated in an aggression management programme.
- Data was collected from eight programmes (averaging 13 participants).
- All staff significantly improved on the knowledge test after training, with the ancillary staff improving by the largest effect size (2.25). However, there was no significant difference in improvement between the three groups. (p=0.11).
- Staff with no prior training had the greatest improvement post training (p<0.01). These improvements were significant for prediction of aggression (p<0.01), management of aggression (p<0.01) and legal aspects of aggression (p<0.05).
- There was no significant different between pre-test scores for staff who had embarked on a number of different training packages. The time since the training was also not significant.
- Nursing staff with previous training scored significantly higher on the pre-test than the other participants with previous training (p<0.01).
- Staff with maximum exposure to service user aggression (nurses) had significantly higher pre-test scores (p<0.01) [Regression analysis was used to assess the relationship between exposure and training, and training rather than exposure emerged as significant (p<0.05)]
- Staff overall were satisfied with the course (median score 8.51/10).
- Staff with previous training commented that training could be improved by focusing on special skills in further training rather than repeating basic courses. Staff with no previous training commented that the course met their needs.

**Reviewer’s comments**
- This study was of reasonable quality. The authors note that recruitment was staggered, which meant that staff without prior training might have become aware of the techniques before training. These staff may have been told that the same questionnaire would be administered pre and post test. Skilfulness in managing aggression was not assessed post training. Authors comment on the need for large RCTs.
<table>
<thead>
<tr>
<th>Source</th>
<th>Study design</th>
<th>Aims of study</th>
<th>Outcome measures</th>
<th>Results</th>
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</table>
| Martin (1995)| Before and after study.       | To assess whether a formal aggression management programme would improve the safety of staff. | • Number of aggressive incidents  
• Level of aggression  
• Type of injury  
• Number of missed work days  
• Cost as a result of missed workdays.  
   Data was collected one year prior and two consecutive years after programme. | Aggressive incidents increased.  
Level of aggression increased.  
Injuries decreased.  
Number of missed workdays fell.  
There was a saving in relation to number of missed workdays: year one, $173,960;  year two, $2,478;  year three, $2,414. |

Country: US  
Evidence level: 2-  
Setting: psychiatric teaching hospital.  
Population: psychiatric nurses (number not reported).  

Reviewer’s comments  
• There is not enough information to assess the quality of this study.
<table>
<thead>
<tr>
<th>Source</th>
<th>Study design</th>
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<th>Outcome measures</th>
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<tbody>
<tr>
<td>Parkes (1996)</td>
<td>Before and after (18 months prior to training, 12 months after). Setting: 44-bedded medium secure unit. Population: staff (not specified).</td>
<td>To assess the effectiveness of a four-day C&amp;R training course.</td>
<td>Interviews with staff using standard form where physical restraint had occurred. Follow-up began after 12 months of onset of training (once all staff had been trained) and lasted for 12 months.</td>
<td>Data was collected on all 340 incidents involving physical restraint. 149 incidents involving restraint occurred after training; these were compared with 149 immediately prior to training. Staff injuries during restraint phase increased after training ($p&lt;0.05$). Injuries to service users during restraint phase did not significantly alter post-training. No other significant changes in injury rates were noted. Overall change in injury rates was not significant. There were no significant changes in difficulty rating or risk rating after training. Modal number of staff restraining a person increased to three after training. Highest number of staff decreased from 10 to 6 after training. After training there was no effective use of breakaway techniques. Staff felt safer and more in control after training when relocating the service user. They felt that C&amp;R techniques appeared more professional to observers. Staff felt that training made it easier to hold the service user for a protracted length of time.</td>
</tr>
</tbody>
</table>

**Reviewer’s comments**
- It is not clear that all staff involved in an incident were interviewed. It is not clear that the staff member most directly affected by the incident was always interviewed. The number of staff and their status was also not recorded. Despite these limitations, this study is of a reasonable quality.
### Source

<table>
<thead>
<tr>
<th>Perkins &amp; Leadbetter (2002)</th>
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</thead>
<tbody>
<tr>
<td>Country: UK</td>
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<tr>
<td>Evidence level: 2-</td>
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</tbody>
</table>

#### Study design
Before and after study.

#### Setting
School for children with severe and complex learning problems.

#### Population
14 teachers.

#### Aims of study
To assess the effectiveness of a training programme (CALM).

#### Outcome measures
- Staff knowledge questionnaire (pre and post training and six months post training).
- Staff stress questionnaire (pre training and six months post training).
- Semi-structured interview (six months only).

#### Results
- Staff knowledge questionnaire response rate 100% pre training, 93% post-training, 86% six months. 11 teachers participated in interviews six months post training. Response rates for the staff stress questionnaire are not given.
- School logbook of incidents was not kept up-to-date by teachers and could not be used for comparison.
- The questionnaires suggest that at six months post training, verbal de-escalation had increased. Senior management were no longer called on to deal with aggressive incidents. (Authors note that this may reflect decreased confidence in senior management).
- In interviews, 82% of staff expressed increased confidence in their ability to deal with an aggressive incident.
- There were no major changes in reported psychological coping strategies between pre-training and six month follow-up.
- There were some references to less physical/health problems post-training.
- There was no significant change in staff attitudes to aggression post training. Authors note that they mirror those suggested in training at the pre-training stage.
- Authors note that ideal acquisition of all the skills was not noted in all staff.
- In interviews, staff suggested that training was important and staff were keen to participate. It was noted that trained staff were being relied upon by untrained staff in a manner that put them under pressure.

#### Reviewer’s comments
- This study does not examine the applicability of CALM for a mental health setting. Any conclusions will have to be extrapolated.
- This study had some quality related concerns. The effectiveness of CALM could not be properly assessed, as the numbers of staff injuries were not made available to the researcher. No control group was available for comparison, as all staff developed some knowledge of the CALM techniques. One of the authors runs CALM training. Any previous training of staff is not mentioned.
- The authors note that as CALM advocates an institutional approach to violence management and only a minority of staff were trained, it is difficult to assess the effectiveness of the system.
## Paterson et al. (1992)

<table>
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<tr>
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</tr>
</thead>
</table>
General health questionnaire.  
Job satisfaction questionnaire.  
Role conflict/ambiguity scale.  
Rater assessment of role-play de-escalation skills, disengagement role-play skills and control and restraint role-play skills. | Knowledge questionnaire showed a significant increase in knowledge (p<1%).  
Stress was reduced (assessed by analysis of general health questionnaire (p<1%).  
No significant change in job satisfaction.  
A significant reduction in perceived role conflict/ambiguity for one group of participants.  
'Blinded' raters judged that there was a significant change towards greater competence in de-escalation, disengagement and control and restraint (p<1%). |

### Reviewer’s comments
- This study was of reasonable quality. However, pre/post role-play incident was the same and the authors do not take increased familiarity with the role-play scenario into account. There was also no long-term follow-up.
- The authors acknowledge that transfer of skills to clinical environment was not measured. There was no evaluation of whether de-escalation skills were more frequently used post-training.
Peniston & Kulkosky (1988)  
**Evidence level:** 2-

<table>
<thead>
<tr>
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<th>Aims of study</th>
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<th>Results</th>
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</thead>
</table>
| Peniston & Kulkosky (1988) | Cohort study. Setting: locked ward. Population: 28 assaultive service users. | To assess the effectiveness of training group assertion and contingent time-out procedures in the control of assaultive behaviours in patients with schizophrenia. | Physical assaults. | • 28 assaultive patients on a locked ward were assigned at random to two groups.  
  • Data on assaults were collected by the head nurse (not blind).  
  • One group took part in 72 half-hour ‘assertive training and contingent time out’ sessions lasting two months.  
  • Mean number of physical assaults in this group decreased from 6.64 in the nine-month pre-treatment phase to 1.0 during the nine months following.  
  • Controls did not change (equivalent means 5.92 and 6.28). |

**Reviewer’s comments**
- Taken from RCPsych review.
### Study design

**Before and after study with two control groups (one no training, one didactic training only).**

**Setting:** two state hospitals.

**Population:** 24 self-selected male mental health staff.

### Aims of study

To assess training in didactic and physical skills.

### Outcome measures

- Clinical experience and sports training (assessed by Buss-Durkee hostility-guilt inventory).
- Physical skills, aggression, and fear (assessed by judges' evaluations - blind to training group).
- Beliefs about non-aggressive responses, felt fear and aggression (assessed by self-report questionnaire).
- Post-training assaults (assessed by follow-up self-report questionnaire).

### Results

- No significant differences between groups pre-test from Buss-Durkee measure.
- After training, experimental group differed from both control groups in terms of better physical competency, and less fear and aggression in judges' rating. Significant differences (p=0.05) were noted. No significant differences were noted between the two control groups.
- After training, experimental group placed significantly more value on non-aggressive responses than two control groups (p=0.05). No significant differences were noted between the two control groups.
- All three groups experienced similar changes in levels of self-reported aggression and fear.
- 14/24 follow-up questionnaires were returned. They indicated less involvement in aggressive incidents and reported no injuries.

### Reviewer’s comments

- This study was of reasonable quality, but the sample size was small. The response to the follow-up questionnaires is also disappointing.
### Study Design

Before and after study with control.

**Setting:** maximum and less secure wards.

**Population:** 89 mental health staff (62 male staff from maximum secure wards and 26 male and female staff from lesser secure wards); plus 37 control staff from equivalent ward environments (14 male staff from maximum secure wards and 23 male and female staff from lesser security wards).

### Aims of Study

To assess a five-day training course in verbal and physical methods for preventing violence and injury when dealing with upset service users.

### Outcome Measures

#### Skill and Knowledge

1. Sensitive situations skill test - rated by expert trainers and nursing staff.
2. Audio-taped simulations test - rated by two independent blind raters.
3. Physical skills test - rated by trainer acting as service user and by two independent raters (lesser secure units only).
4. Self-defence and service user restraint written test - two raters independently scored a sample of responses.

#### Self-report Measures

1. Course feedback questionnaire.
2. Follow-up questionnaires (six weeks and 15 months (63 staff).
3. On-ward job reactions scale (before and six weeks after training).

#### Assault-related Measures

1. Number of assaults.
2. Lost workdays.

#### Patient Measures

2. Scale measuring depression and anxiety from an adjective checklist (Gough & Heilbrun, 1965).
3. A modified feelings scale (Bradburn & Caplovitz, 1965).

### Results

- Only three controls from lesser secure wards complete all measures, nine were assessed only in skill and knowledge measures, 11 completed only self-report measures.
- Significant improvements were found post-test in all areas of knowledge and skill. (Sensitive situations skill test \( p < 0.001 \), audio-taped simulations test \( p < 0.01 \), physical skill test and self-defence and patient restraining written test [lesser security staff only] \( p < 0.0001 \)).
- The course was positively received (mean = 5.5 on a 6-point scale). These results changed little after six weeks and were maintained 15 months later.
- There was a significant increase in the on-ward job reactions scale for maximum-security workers \( (p<0.01) \), compared to controls, but not for lesser security workers. (This scale indicated how comfortable they were with their interactions).
- Significant reduction of incidents \( (p<0.05) \) and days lost \( (p<0.001) \) on study wards relative to non-study wards over the 18 months following training.
- Questionnaire scores improved for service users on wards with trained staff. The results were significant on maximum secure wards \( (p<0.05) \).

### Reviewer’s Comments

- This study is of reasonable quality, however the trainer acted as the rater, whilst being involved in the physical restraint test. The study depends on self-reporting. It was not possible to assess service user responses to staff training - through a ward atmosphere scale (Moos, 1974, 1975) - due to staff objections. A six-month interval separated the various courses. Control groups were tested shortly after each course, rather than consecutively.
Sjöström et al. (2001)  
Country: Sweden  
Evidence level: 2+  

<table>
<thead>
<tr>
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<th>Aims of study</th>
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<th>Results</th>
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</thead>
</table>
|                  | Before and after study.             | To evaluate the utility of a training course in the management of aggressive behaviour (designed to increase staff competence and so reduce occurrence and consequences of aggression). | • Number of aggressive incidents (measured using social dysfunction aggression scale (SDAS-9) and the staff observation aggression scale (SOAS)).  
• Number of staff on sick leave.  
Evaluation six weeks pre and post test. | • There was no significant reduction in either the number of aggressive incidents using SDAS or the number of staff on sick leave.  
• After training, less aggressive incidents were reported using SOAS. |
| Population: all staff and service users (pre test staff=185, service users = 211; post test, staff=144, service users=175) |                                                                 |                                                       |                                                                        |

**Reviewer’s comments**
- This study was of reasonable quality.
- Authors note that although less service users were admitted during the six weeks after training, there was a significant shift from significant less voluntary (p=0.005) to more involuntary (p=0.020).
<table>
<thead>
<tr>
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</thead>
</table>
| Southcott et al. (2002)| Cross-sectional study.              | To assess the views of staff about training and the use of restraint (minor part of study). | Semi-structured interviews.       | - Staff were generally satisfied with the training they had received and felt that the techniques were both effective and appropriate.  
- Staff commented that the process of restraint was often messy and unco-ordinated, but felt that this could be improved with better planning.  
- Authors note that although punches and kicks are the most common assault, less time is spent on these during training than on breakaway skills.  
- All staff had received control and restraint and breakaway training in the previous year.  
- Staff wanted more frequent refresher courses (three to six monthly) and felt that de-escalation training should be provided before breakaway training.  
- Staff felt that incident forms should indicate the breakaway technique used. |

**Reviewer’s comments**

- There are a number of quality related concerns with the study. No information was given on how the interviews were analysed. It is unclear how representative the findings were of the whole group. It is unclear if all staff on the unit participated in the study. No account is taken of reporting bias when incident forms are analysed for the most frequent method of assault on the ward. The sample size is small.
<table>
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<tr>
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<tbody>
<tr>
<td>Taxis (2002)</td>
<td>Uncontrolled before and after.</td>
<td>To assess the effect of training, debriefing and</td>
<td>Incidence of seclusion and</td>
<td>A graph presented in the paper shows a 94% decrease after a 42-month</td>
</tr>
<tr>
<td>Country: US</td>
<td>Descriptive - 42 month.</td>
<td>changes to the physical environment, reporting</td>
<td>restraint.</td>
<td>period.</td>
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<tr>
<td></td>
<td>Settings: 86-bedded adult state psychiatric</td>
<td>procedures and new therapies.</td>
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<td></td>
<td>facility.</td>
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<td>Population: in-patient psychiatric data collected</td>
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<td></td>
<td>on 68 S&amp;R incidents.</td>
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</table>

**Reviewer’s comments**
- Author states that many members of staff expressed surprise that there seemed to be a parallel process of staff and service users experiencing increased control as service users were given greater opportunity to participate in treatment decisions and alternatives to restraint and seclusion. These comments are summarised and measurement of them not specified. Suggests further research into staff-service user dynamic.
- This is a descriptive study illustrating the effect of a comprehensive plan to impact on seclusion and restraint. It is unclear exactly what made the difference - whether staff confidence, ward atmosphere, a combination of factors or a commitment to not using these techniques.
- The study is only conducted in one unit, although over a significant time period. No details on service users are given, which could have some impact on these results.
- There is a question of whether the previous use of these techniques was perhaps abused and therefore the intervention was correctional.
<table>
<thead>
<tr>
<th>Source</th>
<th>Study design</th>
<th>Aims of study</th>
<th>Outcome measures</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Whittington &amp; Wykes (1995)</td>
<td>Before and after study.</td>
<td>To assess the effectiveness of a one-day training package.</td>
<td>• Number of assaults.</td>
<td>The number of qualified nurses was significantly higher in the attendees group (p&lt;0.05).</td>
</tr>
<tr>
<td></td>
<td>Setting: two psychiatric hospitals.</td>
<td></td>
<td>• Rate of assault/staff member.</td>
<td>There was no significant fall in assaults to attendees.</td>
</tr>
<tr>
<td></td>
<td>Population: 155 nurses (47 attendees, 108 non-attendees).</td>
<td>Assaults were recorded for 28 pre and post training. (Violence = physical contact).</td>
<td></td>
<td>The wards that sent the majority of their staff to training noticed a significant reduction in assaults (p&lt;0.05).</td>
</tr>
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<td></td>
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<td></td>
<td>• The number of qualified nurses was significantly higher in the attendees group (p&lt;0.05).</td>
<td>Staff taking part had a 31% lower rate of assault after training. This decrease in violent incidents was unusual when rates of violence in three preceding years were examined. However, it did not reach significance.</td>
</tr>
</tbody>
</table>

**Reviewer’s comments**
- Authors contacted wards each day to avoid possible reporting bias of hospital reporting systems.
- This study is of a reasonable quality. However, restraint training was not taught and the sample was not randomised.
<table>
<thead>
<tr>
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</thead>
</table>
• Rating scale to assess skill and ability to deal with verbal abuse in role-play (used by blind raters).  
• Video footage of role-play. | • There were no significant differences between the two groups pre-test in either role-plays or self-reported questionnaire.  
• Post test, significant improvements for attendees in all areas, except posture, empathy, eye contact and anger levels.  
• Post test, significant improvements for non-attendees were found only for how relaxed the subject appeared (p=0.031), how upset they appeared (p=0.001) and effective use of posture (p=0.005).  
• In the self-reported questionnaire only three scales achieved significance for the attendees after training: feeling less angry (p=0.002); feeling less out of control (p=0.005); and feeling less threatened (p=0.035) in a similar situation. There were no significant differences in the non-attendees questionnaire. |

**Reviewer’s comments**
- This study was of reasonable quality. Raters were blinded to outcome. There was no contamination of groups. Attendees were divided into two groups. This allows a different role-play to be offered post-test and ensures the independent variable was not strengthened by familiarity. All instruments were piloted. However, the sample size was small and this weakens the power of the results. There was also no long-term follow-up and no assessment of the use of training in the clinical environment.
## I The current state of training in the UK

<table>
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</thead>
</table>
• Risk of aggression.  
• Use of PPE or personal alarms.  
• Training provisions  
• Effectiveness of training.  
• Content of training manuals and promotional material (training organisations). | • Low response rates: acute and community trusts - 29%, ambulance trusts - 30%, training organisations - 45%, corporate organisations - 13%.  
• Reporting processes - No significant differences in levels of confidence in the reporting process were found between those trusts using a specific aggressive/violent incident form and those using a general form. However, few trusts that responded had a specific form, making analysis difficult.  
• Risk of aggression - No significant differences in risks of aggression in the reporting process were found between those trusts using a specific aggressive/violent incident form and those using a general form. However, few trusts that responded had a specific form, making analysis difficult.  
• Use of PPE or personal alarms - No significant results. Reports on one apparently successful scheme, but not enough information given to allow assessment.  
• Training provisions (training organisations) - 72% stated staff certificated to deliver training - but no standardisation.  
• 56% reported trainers were qualified first-aiders.  
• 78% offered non-physical conflict management.  
• 67% offered training in physical skills (types of skills outlined).  
• Effectiveness of training (training organisations) - 50% stated that new skills taught were operationally effective (not enough material presented in report to assess quality of evidence).  
• Content of training manuals/promotional material (training organisations) - Evaluation of content appears subjective, inconsistent information on number of physical skills taught. Does however demonstrate that there is no standardisation. |

**Reviewer’s comments**
- Insufficient information given on methods, but the quality of the study was reasonable.
- As mental health trusts were excluded from this study, only those results that informed the review were extracted.
- Authors suggest some control and restraint methods have proven most effective and they list them. However, they offer insufficient evidence.
<table>
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</thead>
<tbody>
<tr>
<td>Davies et al. (2001)</td>
<td>Cross-sectional survey.</td>
<td>To assess how much risk training takes place in mental health services.</td>
<td>• Questionnaire. (Examined content of risk assessment training, mental health legislation training, discharge planning, frequency of training, availability of follow-up courses, whether there were written policies on clinical management of high-risk service users - included information on suicide).</td>
<td>• 82% response rate.</td>
</tr>
<tr>
<td>Country: UK</td>
<td>Setting: 193 NHS trusts providing mental health services.</td>
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<td></td>
<td>• Just over 50% provided training on assessment of risk for harm to others.</td>
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<tr>
<td>Evidence level: 2+</td>
<td>Population: clinical directors from each trust (number not reported).</td>
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<td>• Most provided training on mental health legislation.</td>
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<td>• Most trusts provided annual courses, but it was not compulsory. Follow-up was offered by around 50% of trusts.</td>
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<td>• Existence of written policies varied. Most had policies on observation.</td>
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</table>

The following comments were made by directors:
1. Staff attendance at training tended to be low - often because unable to take time off work due to clinical commitments.
2. Training was said to be planned, where it wasn’t currently taking place.
3. Staff often received additional training as part of routine clinical work or courses such as MRCPsych.

Reviewer’s comments
- The study appears to have been of reasonable standard, although there is no mention of piloting. The authors note that it is unclear whether clinical directors have given a positive slant to their responses, which may make it appear that more training is taking place than is actually the case.
<table>
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</table>
| Lee et al. (2001) | Cross-sectional survey. Setting: PICUs and RSUs. Population: 112 wards (760 questionnaires to nursing staff). | To investigate the training in physical restraint in PICUs and RSUs.                                 | • Physical restraint techniques used.  
• How soon trained after taking up post.  
• Identify providers of training.  
• Length of training.  
• Frequency of refresher courses.  
• Patient safety issues (for example, positional asphyxia).  
• Injuries during training and severity. | • Response rate 63/112 units 338/760 staff - 47%.  
• Despite the wide variety of techniques, authors argue that it was possible to identify a core curriculum of 12 techniques. (Taking the service user to the floor, three-person restraint team, sitting and standing the service user, negotiating stairways and doors, restraining hold, roles within team, turning the service user over, breakaways, entry into and exit from seclusion, blocking punches, blocking kicks, separating fighting service users).  
• Most initial courses lasted for five days.  
• Only 82% were able to identify organisation that provided their training.  
• Respondents in RSUs were significantly more likely to be taught breakaway techniques (p=0.03), entry to and exit from vehicles (p=0.00017) and defence against weapons (p=0.02) than respondents in PICUs.  
• 31% respondents did not state that their course had included ethical and safety issues, or verbal de-escalation.  
• The three techniques that were said to be most common in practice were: verbal de-escalation (50%), restraining hold (49%) and use of three-person team (47%).  
• Trainers score highly on response to safety of service users and trainees. However, 29% of respondents were injured during training, 7% requiring medical attention.  
• 39% received training within three months of taking up post. 21% did not receive training for a year or more and 8% had not received training at the time of the survey.  
• 98% stated that they expected to attend a refresher course.  
• Confidence in skills learnt was high (mean =4.63 on a 6-point scale). |

Reviewer’s comments
- This study was of reasonable quality, however, the response rate was low. This affects the study’s ability to offer a comprehensive response to the types of training courses on offer in the UK. The questionnaire was reviewed by expert organisations and piloted.
<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Wright et al. (2000)</td>
<td>Cross-sectional survey.</td>
<td>To assess the policies for the management of violence in PICUs and RSUs in the UK.</td>
<td>If policy: • was up-to-date? • stressed the need to report incidents, post incident review and support etc.? • stated aim or defined violence? • included commitment to training mentioned and details, including refresher courses? • mentioned methods of restraint?</td>
<td>• 33 policies were returned. A good geographical spread was represented. • 27% of policies were undated. 9% were definitely up-to-date, 9% were definitely out-of-date. • 3/4 policies stressed the need to report incidents, have post-incident team support and review of incident, outlined the expectations and responsibilities of staff, emphasised prevention and de-escalation and had a commitment to train all appropriate staff. • Less then 2/3 policies stated the aim of the policy or gave a definition of violence. • Where a commitment to training was mentioned, less then half stated whose responsibility it was to ensure this. Just over half stated that a refresher course was needed. • Less than half the policies mentioned unacceptable methods of restraint, 94% listed physical restraint as an acceptable method for violence management.</td>
</tr>
</tbody>
</table>

**Reviewer’s comments**
- This study is of reasonable quality, however the response rate is low.

### 5.4 Working with service users (with diverse backgrounds)
## I Staff issues and perspectives
(Studies that were specifically identified for this review)

<table>
<thead>
<tr>
<th>Source</th>
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</thead>
</table>
| Baxter et al. (1992) | Survey.      | To elicit nurses’ experiences and attitudes towards physical assault.         | • Assault rate (measured in terms of status - grade and specialism - length of employment, location – ward- gender and basic training in assault avoidance) - assessed by biographical and demographic form.  
• Attitude towards assault - assessed by specially designed attitudes to assault questionnaire.  
• Sex role beliefs - assessed by the Bem Sex role inventory. | • 61% response rate.  
• **Assault rate positively correlated with:**  
  - length of employment (p<0.001)  
  - status (p<0.001 - attributable to much higher rate of assault amongst student nurses).  
• **Attitudes towards assault**  
  - most nurses thought that gender was irrelevant to assault rate. However, males were significantly more likely than females to consider male nurses better at handling acutely assaultive service users (p<0.001).  
• **Nurses concerned about:**  
  - high levels of violence  
  - management of assaultive service users  
  - staff gender related violence issues  
  - assumed ability to predict violence  
  - support/protection provided by hospital. |

### Reviewer’s comments
- Authors note that results amalgamate neutral response into either + or - outcomes.
- Authors note that results may not be generalisable.
- Questionnaire not tested for reliability.
- Results may be country/setting specific.
- This study has a number of quality related issues.
<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>Carlsson et al. (2000)</td>
<td>Phenomenological study (transcribed accounts followed up by interviews). Setting: psychiatric clinic. Population: two nurses and three nurse assistants.</td>
<td>To assess the use of tacit knowledge in bringing about a positive outcome in encounters with aggressive and violent service users.</td>
<td>Themes emerging from transcripts relating to the study aims.</td>
<td>Seven themes emerged: respecting one’s fear, respecting the client, touch, dialogue, situated knowledge, stability, mutual regard and pliability.</td>
</tr>
</tbody>
</table>

**Reviewer’s comments**
- Authors argue that inter-subjective knowledge is a crucial aspect of caring practice and warrants further attention.
- This study is of reasonable quality, however further interviews are required to build up a picture of how these themes compare to those put forward by other individuals in similar and different in-patient settings.
Crichton et al. (1998)
Country: Canada and UK
Evidence level: 2-

<table>
<thead>
<tr>
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</table>
| Crichton et al. (1998)  
Country: Canada and UK  
Evidence level: 2- | Cohort study with historic control.  
Setting: psychiatric in-patient settings (various).  
Population: 132 Canadian nurses, controls = 32 British nurses (all grades) (used sample from earlier pilot study - Crichton JHM, 1997 as control). | To compare the attitudes of Canadian and British nursing staff towards the management of service user misdemeanours. | - Responses to video vignettes (measured by semi-structured questionnaires).  
- Demographic variables. | - No statistical differences were found for demographic variables within the Canadian sample or between the Canadian sample and the UK sample.  
- The following results were significantly different. More Canadian nurses opted for PRN medication if the service user would accept it (p<0.05). More UK nurses would talk to the service user about what had happened (p<0.01). More Canadian nurses would recommend a short time in seclusion (p<0.01). More UK nurses would use de-escalation techniques (p<0.05). More Canadian nurses would use PRN medication against the service user’s wishes (p<0.05). More Canadian nurses would request police involvement (p<0.05).  
- The following results related to the Canadian study only.  
- Where nurses attributed an incident to service user choice, the following responses were deemed most helpful: police involvement (p<0.001), telling the service user their action was wrong and unacceptable (p<0.05), the use of sanctions (p<0.05).  
- Those who rated some degree of personal threat rated the following as helpful: seclusion (p<0.05), sanctions (p<0.01) and police involvement (p<0.05).  
- Those who rated any degree of threat to the ward rated mechanical restraints as helpful (p<0.05).  
The authors note that the Canadian nurses tended to opt for more restrictive measures to control incidents than UK nurses. |

Reviewer’s comments
- The authors note that the response to vignettes may not compare fully to real life responses.  
- The authors note that minor differences in terminology usage may have been unavoidable and so may have skewed the results slightly.  
- This study has quality related concerns, since the control group is a selected group of nurses from a larger study. The manner in which the nurses were selected from the previous study of UK nurses (n=192) is not specified. This could leave to a serious bias that jeopardises any comparison of attitudes by UK and Canadian nurses.
<table>
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</table>
| Crichton (1997) | Single sample cohort study. | To assess the attitudes of nurses towards the management of a service user misdemeanour. | • Level of threat (personal/general).  
• Whether staff reported different strategies for different diagnoses.  
(All assessed by semi-structured questionnaire responses to video vignettes). | • When the service user was diagnosed with schizophrenia, the following were rated as more helpful by staff: voluntary medication (p<0.001), and non-voluntary medication (p<0.001).  
• When the service user was diagnosed with personality disorder, the following were rated as more helpful: sanction (p=0.003), telling the service user their action was wrong and unacceptable (p=0.036), encouraging the service user to apologise (p=0.011), police investigation (p=0.034).  
• When the service user was female, had personality disorder and was involved in a violent incident, sanction was rated as most helpful (p=0.034).  
• Seclusion was rated more helpful if the service user was male (p=0.047).  
• When the service user had a history of violence, seclusion (p=0.027) and sanctions (p=0.047) were rated as more helpful.  
• There were no significant differences according to the race of the service user  
• Those who felt personal threat, found the following more helpful: seclusion (p<0.001), voluntary medication (p<0.001), compulsory medication (p=0.018), sanctions (p=0.018), telling off (p=0.002), police involvement (p<0.001). Those who rated any degree of threat, found the following more helpful: seclusion (p=0.02), sanction (p=0.001), telling off (p=0.001) and encouragement of an apology (P<0.001). However, the choice of sanction depended on the nature of the incident. Where the incident involved punching rather than the use a firearm, the following were rated as more helpful: seclusion (p=0.001), non-voluntary medication (p=0.048) and encouraging an apology (p=0.023).  
• Patients with personality disorder (p<0.001) and those with a history of violence (p=0.008) were said to have acted out of choice rather than lack of self-control. Only those service users with a history of violence and schizophrenia were said to have acted out of lack of self-control (p=0.032).  
• When untrained staff were compared with trained staff, every response - except de-escalation techniques and police involvement - were rated as significantly more helpful. |

**Reviewer’s comments**
- Author notes that vignettes may not fully correspond to real life.
- This study was of reasonable quality but the application of Chi squared analysis to content analysis appears questionable.
### Source
Cutcliffe (1999)

<table>
<thead>
<tr>
<th>Country: UK</th>
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<td>Evidence level: 2+</td>
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<table>
<thead>
<tr>
<th>Study design</th>
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<tbody>
<tr>
<td>Hermeneutic study. Setting: unit with high incidence of violence in psychiatric hospital. Population: six qualified nurses (all from unit).</td>
<td>To examine the experiences of nurses who experience violence from individuals suffering from long-term mental health problems.</td>
<td>Themes emerging from participant interviews.</td>
<td>- Three overlapping key themes, describing the lived experience of violence, emerged: personal construct of violence; feeling equipped; and feeling supported. - The importance of training and debriefing were stressed.</td>
</tr>
</tbody>
</table>

**Reviewer’s comments**
- Author argues that there is an important relationship between a nurse’s ability to deal with an incident therapeutically and feeling supported. This should be considered in strategic plans.
- Study notes how different perceptions of an individual’s behaviour as violent or not violent (based on their therapeutic relationship with the client) influence nurse decisions to report an incident as violent.
- Author notes that the findings of the study are not generalisable.
- This study is of reasonable quality, however further interviews are required to build up a picture of how these theme compare to those put forward by other individuals in similar and different in-patient settings.
### Source
Delaney et al. (2001)

**Country:** Australia  
**Evidence level:** 2-

### Study design
Multi-method approach using survey and focus groups and analysis of incident forms:
- survey - n=95 registered nurses  
- focus groups- nursing staff (number of focus groups or staff involved not stated)  
- incident forms n=60.

**Setting:** four acute in-patient facilities.  
**Population:** psychiatric nurses.

### Aims of study
To study the clinical management of service users identified as potentially aggressive in psychiatric in-patient settings.

### Outcome measures
Nursing management strategies.

### Results
- 59/95 (62%) surveys returned. - 88% respondents indicated that they had been assaulted. 53% had participated in training in the past 12 months.
- Six risk factors for violence emerged from the focus groups - history, status and arrival mode; ongoing informal nursing assessment; individualised care; peer support and administrative responsiveness; aggression and nursing stress and policies/manuals.
- 75% of service users instigating aggressive behaviour had been identified as at risk on admission. Progress noted documented this risk for 73%.

### Reviewer’s comments
- There are several quality related problems with this study: the number of focus groups and the number of participants overall or in each is not stated. The method of analysis used for the various studies is not stated. It is not clear whether the studies were undertaken contemporaneously.
Duxbury (1999)  
Country: UK  
Evidence level: 2-  

<table>
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<tbody>
<tr>
<td>Duxbury (1999)</td>
<td>Qualitative.</td>
<td>To compare nurse experiences of violence in the two settings.</td>
<td>Critical incident technique. (Critical incident involves providing participants with a blank sheet of paper with a written prompt - i.e. a sentence asking them to expand on an assault incident).</td>
<td>Reliability/validity of approach tested by an independent researcher</td>
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<td>To see if similarities/differences exists between experiences in these settings that can be used as learning points.</td>
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<td>Indicated findings:</td>
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<td>- nurses attributed violence to internal factors</td>
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<td>- emphasis on biomedical approach</td>
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<td>- verbal and physical abuse most common</td>
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<td>- Lack of reference to de-escalation</td>
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<td>- MH nurses controlled events themselves, general nurses sought external support.</td>
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</table>

Reviewer’s comments  
- Author states sampling and size appropriate to study design.  
- Author comments that lack of prompting for reference to de-escalation may reflect study design weakness.  
- The methodological approach adopted by this study makes it a weak study in terms of quality. These concerns are not, however, overwhelming.
### Study Design

**Duxbury (2000)**

Country: UK  
Evidence level: 2-

<table>
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</table>
| Duxbury (2000) | Pluralistic evaluation design (triangulation methodology). Setting: three acute wards (one PICU, one high dependency, one open acute ward). Population: service users (n=80) nurses (n=72) medical staff (n=10) (qualified and students). | To record the nature and management of aggressive and violent incidents. To survey staff and service users’ views about causes of violence and its management. To compare views of staff with views of service users. To determine the impact of internal, external and situational models on views and practice. | Aim 1 - adapted incident forms - modified staff observation aggression scale (MSOAS). Aim 2, 3 and 4 - the management of aggression and violence attitude scale (MAVAS). Semi-structured group interviews (used to corroborate finding on attitude scale - not incorporated into results). | - 221 violent incidents recorded.  
- Statistic analysis of MSOAS and MAVAS were conducted using descriptive and inferential statistics.  
- 70% of incidents involved verbal threats or abuse only. Physical violence accounted for 13.5% of incidents.  
- Staff most commonly reported problematic interaction and restrictive environments as causes of violence/aggression. However, staff did not view their own interactions with service users as problematic when surveyed. 26% of all incidents were not attributed to a specific cause.  
- Strong correlation between type of aggression reported and intervention used (p<0.000). Most common strategies used in isolation were de-escalation (22%) and medication (25%). However, range of techniques, involving restraint, medication and seclusion, was reported for 47% of all incidents.  
- Service users and staff had a number of opposing views about the causation and management of violence/aggression.  
- Service users believed that external and situational factors (such as staff interaction and restrictive regimes) were largely to blame (p<0.001). Reactive aggressive incidents resulting in assault =42.9%.  
- Staff emphasised internal factors (i.e. service user illness).  
- Staff want practices such as seclusion to continue; service users, in many instances, do not (p<0.000).  
- Service users are not aware of the use of de-escalation techniques (p<0.000). |

### Reviewer’s comments

- Author notes that neither staff nor service users were happy with the current approach (which used standard interventions such as seclusion and restraint that the author argues can be attributed to a philosophy based on control). Both parties felt that violent incidents could be managed better.  
- There are methodological weaknesses with this study. In particular, only selected results are taken from staff and service user interviews. Most results are taken from the incident forms. Whilst these quality concerns are not overwhelming, they threaten the findings, since it is not clear whether what was not reported challenged the findings of the incident reports.
<table>
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</table>
| Lowe et al. (2003)     | Questionnaire survey.| To examine nurse perceptions about conflict situations, (for example, importance of and details of each event); and whether there are differences between individual nurses and grades of nurses (including nursing assistants). | 10 scenarios were rated using 10 response statements. Each statement represented a specific type of intervention, based on previously identified theme. A 20-point scale was used to register agreement between nurses and nursing assistants. | • Response rate= 72%.  
• Three main themes emerged - support/control, communication, face-saving/personal control. Support/control was considerably more important than the other two.  
• Nurses with higher grades tended to use less limit setting interventions.  
• Authors conclude that training and education may underlie this difference.  
• Authors posit that since limit setting has been associated with triggering conflict situations, nurse training may reduce in-patient aggression. |
| Evidence level: 2+     |                      |                                                                              |                                                                                                                                                  |                                                                                                                                              |

**Reviewer’s comments**
- The authors noted that one weakness with the study design is that clinical experience was not measured. Grade was used as a proxy.
- Authors also note that higher-grade nurses tend to have less contact with service users, but do not consider this a design weakness.
- Authors recognised that further research is needed to assess nurses’ attitudes and limit setting.
- The study was of a reasonable quality.
Morrison (1993)
Country: US
Evidence level: 2-

<table>
<thead>
<tr>
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</tr>
</thead>
</table>
| Controlled cohort study. | To assess nurses perceptions of serious violent behaviour and whether perceptions vary between nurses with or without extensive psychiatric experience. | Author notes that the design meant that no outcome measures were used. Demographic details were collected. The study consisted of rating pairs of items in terms of seriousness using the violence scale. | • There were no significant differences in terms of demographic details between nurses and those enrolled on doctoral programme.  
  • There was a high degree of agreement between psychiatric nurses and doctoral students over which types of violence were most serious. Only small difference were noted.  
  • However, psychiatric nurses themselves displayed disagreement about the seriousness of types of violence.  
  • In rating types of violence as serious, differences were noted with students rating violence to others and verbal violence to others as standard. Psychiatric nurses rated violence to property as standard and rated violence to others and verbal violence to others as similar. Again there were discrepancies within the groups of nurses. |

Population: 69 nurses - 34 psychiatric, 35 doctoral student nurses (as control).

Reviewer’s comments
- Author notes that the study design made it impossible to determine the cause of any differences.
- Author notes that the results may not be generalisable to other psychiatric professional groups.
- Author argues that the study has implications in relation to how nurses predict violence. It is not clear how the findings of this study can be transferred to the clinical environment.
- The decision to compare psychiatric nurses with doctoral students is not explained and the decision seems odd. It is possible that the aim is to test the effect of education and lack of psychiatric experience on ratings of seriousness for violent events, but the manner in which these two variables interact and confound one another is not explored. The sample size seems too small for patterns to emerge.
### Source

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</table>
| Single sample cohort (causal modelling). | To investigate whether there is a correlation between relationship, personal growth and factors which maintain the current hospital approach/system (system maintenance) - for example, authoritarianism and social restrictiveness. | The following antecedent variables were assessed:  
• **Relationship** (extent to which employees were concerned about their jobs, supportive and supported)  
• **Growth** (extent to which employees encouraged to be self-sufficient and efficient, also time constraints)  
• **System maintenance** (extent to which employees know what to expect and to which rules were communicated. Way that rules were used to keep employees under control)  

The following beliefs were assessed:  
• authoritarianism (people with mental health problems are inferior and require coercive handling)  
• social restrictiveness (mentally unwell are a threat to society and functioning must therefore be restricted during hospitalisation).  

Measured by:  
• the work environment scale (WES) - used to assess relationship, growth and system maintenance  
• opinions about mental illness scale (OMI) - used to assess authoritarianism  
• violence scale (VS) - used to assess violent incidents  
• social desirability scale (SDS) - used to assess social restrictiveness  
• demographic data collection instrument. | Most staff rated themselves as able to form good relationships with service users (56.8%). Most rated themselves better than other staff in terms of performance (65%).  
• Regression analysis was used to determine the relationship between authoritarianism and social restriction and aggression (the latter is the dependent variable).  
• Author notes that although authoritarian ideology is not predictive of aggression in either model, aspects of control are predictive in both models. Satisfaction with the hospital emerged as the most predictive of all the model variables |
| Country: US Evidence level: 2- |                                                                                      |                                                                                                                          |                                                                          |
| Population: 162 Staff.                                                                 |                                                                                                                          |                                                                          |                                                                          |

**Reviewer’s comments**

- Several factors were not included within the analysis - type of hospital, or level and education of participating nursing staff - which is a weakness of the study, since they may not be adjusted for.
- The author notes a number of weaknesses with the study design, such as an unquantified relationship between attitudes and behaviour; only marginal consistency in three of the scales; and a lack of clarity as to whether the OMI is the appropriate tool to assess control in nurses. This last query seems to result from the fact that the model is not entirely upheld by the study.
- The study is theoretical.
- It is not clear that the model adds anything to the study beyond that which is achieved by assessing the outcome measures and then correlating results. This approach makes the results confusing, and although the quality issues are not overwhelming, it is not clear how much this study adds to our understanding of the causes of violent incidents.
### Nolan et al. (2001)

**Country:** Sweden and UK  
**Evidence level:** 2-

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<tr>
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</table>
- Type of incident.  
- Severity of incident.  
- Self-esteem.  
- Satisfaction with working environment. | - UK response rate (45%), Swedish response rate (68%).  
- Over preceding 12 months, 71% of UK nurses compared to 59% of Swedish nurses had been exposed to violence. More UK nurses had been exposed very often (P<0.01). UK nurses reported a higher level of violence involving service user’s relatives (p<0.05).  
- Significantly more UK nurses had been victims of aggressive behaviour, i.e. spitting (p<0.01) and had experienced violence involving a weapon (p<0.05).  
- More UK nurses described receiving minor injuries.  
- More support was available to Swedish nurses following an incident (p<0.01).  
- UK nurses were more likely to report low self-esteem (p<0.05).  
- UK nurses who had experienced violence in the preceding 12 months were more likely to find their job always psychologically taxing (P<0.05).  
- Swedish nurses were more likely to say that they were satisfied with their work duties (p<0.05).  
- A negative correlation was found between high self-esteem and positive attitudes to work (p<0.01).  
- A positive correlation was found between self-esteem and influence over work duties (p<0.17).  
- A positive correlation was found between self-esteem and feedback from line managers (p<0.05). |

**Reviewer’s comments**  
- 30% of the UK nurses worked in the community; all Swedish nurses worked in in-patient departments.  
- Authors note that the study raises questions about the role of nurses in the UK, public perception of their role and need to address training issues.  
- This study was of reasonable quality.
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<tr>
<td>Omérov et al. (2001)</td>
<td>Cross sectional study (over three years - 18 months of study period in total). Setting: two 16-bedded psychosis wards. Population: nursing staff (137 interviews).</td>
<td>To ascertain number and type of violent incidents over 18 months and to assess staff reactions to assault.</td>
<td>- Staff observation aggression scale (SOAS) used to assess number and type of incident. - Semi-structured interviews using questionnaire to assess staff responses to violence. - Demographic details of service users and staff (method of collection not specified).</td>
<td>- 137 incidents. There was a gradual decrease in violent incidents during the study. - Violent female service users tended to be older than their male counterparts (p&lt;0.001). - 30% of violent incidents were regarded as unprovoked. 47% of incidents were associated with limit setting, or instruction giving re medication. - 81% of the violence was directed towards staff. - 53% of the violence was committed by men; 47% by women. - Most violent acts were directed against women (93% of female attacks were against women, and 67% of male attacks - p&lt;0.001). - 17% of violent incidents were between service users. - Most staff felt insulted by the assault (43%); one-third felt angry. More men felt frightened (p&lt;0.05); more women felt surprised (p&lt;0.01). Most staff felt very uncomfortable after the assault, brought the incident home with them, found it hard to relax, nightmares were frequent, and returning to work could be difficult. - All except one would have liked training in self-defence and update courses. - Majority wanted training in psychopathology. - Wanted debriefing (saw the interviews in this light).</td>
</tr>
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</table>

Reviewer’s comments
- Authors note that one change was the introduction of zuclopethixol acetate to control psychotic service users in the course of the three years evaluated, which could act as a to confounder.
- The way that the questionnaires were used changed over the course of the study.
- Authors argue that violence between service users is likely to be more prevalent than the study indicates, due to under-reporting.
- This study was of reasonable quality.
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</table>
| Ray & Subich (1998)     | Survey.            | To assess whether there is a relationship between staff attitudes and service user assault. | • External locus of control - assessed by internal-external locus of control scale (I-E).  
• Anxiety - assessed by state-trait anxiety inventory (STAI).  
• Authoritarianism - assessed by right wing authoritarianism scale (RWA).  
• Number of years working in hospital.  
• Number of injuries over previous year and throughout employment at the hospital.  
• Number of assaults over previous year and throughout employment at the hospital.  
• Demographic information. | • Response rate 78/150.  
• Results were analysed using MANCOVA and regression analysis.  
• A significant relationship between: STAI score and injury during the last year was noted (p=0.01), external locus of control and ever being injured (p=0.05), STAI score and ever being injured (p=0.02), external locus of control and ever being injured (p=0.02), STAI scores, injury in the last year and level of trait anxiety (p=0.01).  
• Prediction of the mean number of assaults was significantly related to trait anxiety, locus of control and authoritarianism.  
• A lower RWA score was associated with more annual assaults. |

Reviewer’s comments
- The authors conclude that the results indicate that external locus of control, anxiety and authoritarianism are connected with service user assault and injury.
- The authors noted the following limitations: relatively small sample size, that the operational definition of assault and injury may have been too vague for the expected MANCOVA differences to emerge, and that accurate results in the regression analysis may have been affected by lack of recall of assault by the participants.
- This study was of reasonable quality.
Spokes et al. (2002)  
**Country:** UK  
**Evidence level:** 2+  

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</table>
| Spokes et al. (2002) | Single sample cohort (semi-structured interviews). Setting: 13 psychiatric in-patient units across five sites (10 adult acute admission wards, two PICUs and one low secure unit). Population: 350 nursing staff (qualified and unqualified). | To obtain the views of a sample of mental health nurses about staff-related factors that they perceive contribute to or reduce in-patient violence (physical and psychological). | - Standard content analysis (QSR NUD*IST software package (V 4.0, QSR, 1997).  
- SPSS was used to assess demographic data. | - 108/350 staff took part (63% qualified, 40% unqualified care assistants). (108/350 = 29%).  
- 27 characteristics were identified as having a positive influence on the potential outcome of an incident  
- 19 characteristics were identified as having a negative influence on the potential outcome of an incident.  
- Three main themes were identified - clinical skills, personal characteristics, interpersonal skills - which nurses believe have the potential to both positively or negatively affect in-patient violence. |

**Reviewer’s comments:**  
- The authors noted that there is a possibility that nurses’ responses were not entirely honest. However, they argue that the level of responsibility that nurses assumed for the occurrence of violent incidents suggests most nurses were honest.  
- Authors also note that higher-grade nurses tend to have less contact with service users, but do not consider this a design weakness.  
- Authors suggest that training programmes should be developed that focus not only on clinical skills, but also on interpersonal skills and characteristics.  
- This study was of reasonable quality.
<table>
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<tbody>
<tr>
<td>Wykes &amp; Whittington (1998)</td>
<td>Case control.</td>
<td>To investigate the effects of workplace violence on psychiatric nurses.</td>
<td>• Trauma related stress - assessed using impact of events scale (IES) and PTSD symptom scale (PTSDSS). • General distress - assessed by state-trait anxiety inventory (STAI), state-trait anger expression inventory (STAXI), the general health questionnaire (GHQ-28) and the Beck depression inventory (BDI). • Physical injury (coded present or absent). • Concurrent stressors - assessed by daily hassles questionnaire (DHQ) and 118-item schedule. Assault = physical contact.</td>
<td>• Baseline was established by selecting an initial group of nurses (n=26) from a PICU who had not been assaulted by a service user at work in the preceding months (time 0). • Assaulted group (n=39) were assessed twice (within 10 days of assault (time 1) and one month after (time 2). (Some were also assessed at baseline which enabled pre and post changes to be measured n=10). • A control group (n=34) were recruited concurrently with assaulted group (not assaulted in previous six months) and matched as far as possible to assault group. • PTSD was noted (PTSDSS). Two nurses had PTSD at time 1; two different nurses had PRSD at time 2. • The mean scores on all measures for general distress were below those that would indicate severe psychological effects in assaulted nurses. • Where physical injury was sustained, PTSDSS and IES were significantly higher at time 1 (p&lt;0.05). Intrusion and avoidance symptoms were also significantly higher (p&lt;0.05) at time 1 (symptoms of trauma related stress and general distress). • There was no significant relationship between concurrent stressors and either trauma related stress or general distress. • Victims who experienced another assault between time 1 and time 2 were significantly more likely to experience very high or very low symptoms of stress at time 2 (p&lt;0.005). • For PTSDSSs and GHQ, arousal measures at time 1 were significantly related to increased avoidance at time 2 (PTSDSS p=0.001, GHQ p=0.003). • Significant relationships were found between avoidance at time 1 and stress symptoms at time 2 on PTSDSS (p=0.03) and IES (p=0.004). • Six of the 17 participants who reported avoidance (scored at least 1 avoidance item on PTSDSS) at time 1 had either the sub-syndrome or PTSD at time 2 (p=0.008). • Authors note that no staff member took time off work. They argue that the high-risk environment in which staff work means that they are less likely to make attributions of self-blame.</td>
</tr>
<tr>
<td>Country: UK</td>
<td>Setting: six acute psychiatric wards in a major teaching hospital.</td>
<td>Population: 39 psychiatric nurses. 34 concurrently selected psychiatric nurse acted as control matched by grade and sex and age.26 nurses from a PICU were used to establish baseline scores.</td>
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<td>Evidence level: 2-</td>
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Reviewer’s comments
- There are several quality issues raised by this study. The most serious is the inclusion of results from the baseline group where these nurses were later assaulted. This group is an uncontrolled cohort, which is not related to the main study participants. The results are reported in a confusing way, making it difficult to disentangle which group is being referred to. The sample size is also small.
I. Service user perceptions

<table>
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<tbody>
<tr>
<td>Crowner et al.</td>
<td>Survey.</td>
<td>To ascertain service users’ reasons for</td>
<td>• Video footage.</td>
<td>40/113 service users assaulted other service users.</td>
</tr>
<tr>
<td>(1999) Country:</td>
<td>Setting: 14-bed</td>
<td>service user assaults.</td>
<td>• Interviews (interviewer blinded to nature of incident).</td>
<td>- Refused to be interviewed/missing data 26%.</td>
</tr>
<tr>
<td>US Evidence</td>
<td>PICU.</td>
<td></td>
<td>• Assault agreement (Inter-rater reliability between video cameras Kappa 0.88).</td>
<td>- Patients stated assault resulted from:</td>
</tr>
<tr>
<td>level: 2-</td>
<td>Population: 113</td>
<td></td>
<td>- playing with victim 12%</td>
<td>- verbal abuse 12%</td>
</tr>
<tr>
<td></td>
<td>known violent</td>
<td></td>
<td>- “objectionable” behaviour 9%</td>
<td>- “other (listed in article separately) 41%</td>
</tr>
<tr>
<td></td>
<td>service users.</td>
<td></td>
<td>(Themes were generated by content analysis and then ascribed by blind</td>
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<td>raters to each response).</td>
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Reviewer’s comments
- Authors note that 26% of service users refused to be interviewed about assault and since only 40 service users were interviewed, results must therefore be treated with caution and cannot be generalised.
- The authors acknowledged that service users’ responses may not always be factual and may be based on pathology.
- The quality of this study was reasonably sound.
Violence: The Short-Term Management of Disturbed/Violent Behaviour in Psychiatric In-patient and Emergency Departments Guideline

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<tbody>
<tr>
<td>Flannery et al. (1995)</td>
<td>Survey (local and state-wide).</td>
<td>To assess the impact of threatening and violent behaviour on staff.</td>
<td>• Frequency and nature of threats - assessed by New York level of care survey (LOC).</td>
<td></td>
</tr>
<tr>
<td>Country: US</td>
<td>Setting: 400-bed state mental hospital and statewide survey.</td>
<td></td>
<td>• Impact of threats on staff - assessed by assaulted staff action programme (ASAP) prospective debriefing results.</td>
<td></td>
</tr>
<tr>
<td>Evidence level: 2+</td>
<td>Population: 953 service users with schizophrenia or affective disorder (DSM-III-R); 658 full time staff (also state-wide data considered).</td>
<td></td>
<td>(Data was also culled from larger aggregate data from another hospital, where 85% of service users had schizophrenia).</td>
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</table>

**Reviewer’s comments**
This study combines a local study with a statewide survey. It is unclear whether any of the results on impact relate to the local study. It is unclear whether the studies were contemporaneous. It is unclear what value the local study adds. Details of the survey are not given and the conclusions conflate the results a number of studies, one by the author. The relationship of this study to the present one is unclear.
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<tbody>
<tr>
<td>Kumar et al. (2001)</td>
<td>Focus group.</td>
<td>To assess the experiences of service users who were perpetrators, victims or witnesses of violence.</td>
<td>Themes analysed using grounded theory.</td>
<td>Six themes were identified:</td>
</tr>
<tr>
<td>Country: UK</td>
<td>Setting: psychiatric hospital.</td>
<td>(Some difficulties were noted in transcription when the discussions became heated).</td>
<td>• imbalance of power (exists in the mental health system)</td>
<td>• violence has psychological sequelae</td>
</tr>
<tr>
<td>Evidence level: 2-</td>
<td>Population: six service users.</td>
<td></td>
<td>• mental health service are not geared to help victims of ‘institutional violence’</td>
<td>• the present mental health system fosters violence</td>
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<td>• the present mental health system fosters violence</td>
<td>• a radical change is needed in the infrastructure of the mental health system</td>
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<td>• reinforcement and reform may come from parallel efforts.</td>
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</table>

**Reviewer’s comments**
- Authors acknowledge that only one focus group was held, but argue that information saturation was achieved. They acknowledge that additional groups may have been useful.
- They argue that the choice of group members from a pre-existing group allowed spontaneity.
- They acknowledge that the results may not be generalisable to a wider population.
- This study is of reasonable quality. However, further groups are needed to check the generalisability of the results, both within the hospital and in other psychiatric in-patient settings.
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<td>Lancee et al. (1995)</td>
<td>Cohort study.</td>
<td>To assess the extent to which aggressive behaviour and impulsivity in service users is linked to nurse limit-setting styles.</td>
<td>Main outcome variable: - Level of anger - assessed by Spielberger state-trait anger scale.</td>
<td>Only 56 of the 96 service users participated in both days of role-plays (therefore only first day’s scores were analysed) The role-plays consisted of nurse actors speaking with service users, using one of six limit setting styles. Effect of a particular nurse actor was shown to have negligible effect. State-anger scores were available for each service user. These were averaged to produce six anger scores. No significant main effects of diagnosis on impulsivity scores. All three independent variables had a significant positive effect on state anger scores (limit setting $p&lt;0.001$, impulsivity $p&lt;0.001$, diagnosis $p&lt;0.05$). Interaction between diagnosis and limit setting style was statistically significant ($p&lt;0.001$). For all diagnostic groups, belittlement was most likely to generate anger than other limit setting styles and affective involvement with options - i.e. showing empathy and giving the service users a choice of possible responses - was least likely to generate anger. For participants with a diagnosis of schizophrenia, intermediate styles between belittlement and affective involvement with options could not be differentiated with respect to state anger. Impulsive service users were statistically more likely to respond with anger than non-impulsive service users.</td>
</tr>
<tr>
<td>Country: Canada Evidence level: 2+</td>
<td>Setting: general psychiatric in-patient unit.</td>
<td>Population: 97 service users (consecutive sample).</td>
<td>Independent variables: - Impulsivity (Eysenck and Eysenck scale ‘IVE’ inventory) 11 or lower = low impulsivity, 12 or above = high impulsivity. 2. Limit setting style (six styles). 3. Diagnosis (not standardised). - Demographic and clinical characteristics collected at admission.</td>
<td>├── Only 56 of the 96 service users participated in both days of role-plays (therefore only first day’s scores were analysed) The role-plays consisted of nurse actors speaking with service users, using one of six limit setting styles. Effect of a particular nurse actor was shown to have negligible effect. State-anger scores were available for each service user. These were averaged to produce six anger scores. No significant main effects of diagnosis on impulsivity scores. All three independent variables had a significant positive effect on state anger scores (limit setting $p&lt;0.001$, impulsivity $p&lt;0.001$, diagnosis $p&lt;0.05$). Interaction between diagnosis and limit setting style was statistically significant ($p&lt;0.001$). For all diagnostic groups, belittlement was most likely to generate anger than other limit setting styles and affective involvement with options - i.e. showing empathy and giving the service users a choice of possible responses - was least likely to generate anger. For participants with a diagnosis of schizophrenia, intermediate styles between belittlement and affective involvement with options could not be differentiated with respect to state anger. Impulsive service users were statistically more likely to respond with anger than non-impulsive service users.</td>
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Reviewer’s comments
- Authors noted that whilst non-impulsive service users had low anger with three limit setting styles - solution with options (that is offering a number of set solutions), affective involvement without options (empathy, but only one solution) and affective involvement with options (empathy, with a number of solutions), only the latter kept anger at a low level for service users with high impulsivity. The impulsivity of service users needs to be taken into account as a way of minimising violent/disturbed incidents.
- Authors also note that the range of affective expression was lower for service users with schizophrenia than for other groups (sample size was too small for other diagnosis-specific observations). Nurses need to be aware of the need to be both empathetic and offer options if possible to service users with schizophrenia as a way of minimising violent/disturbed incidents.
- Authors note that 91% of service users confirmed being able to imagine themselves in the situation and 88% indicated that nurses tended to talk to service users in the way indicated in the scenarios, suggesting the clinical relevance of the scenarios.
- Authors argue that the results confirm other investigations that interpersonal factors play an important role in the management of anger.
- This study was of reasonable quality.
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<tr>
<td>Mann et al. (1993)</td>
<td>Questionnaire survey conducted over one year.</td>
<td>To examine service users' perspectives about the seclusion room.</td>
<td>• Diagnosis.</td>
<td>Service users with no history of substance abuse more often reported that the room was like a padded cell (p&lt;0.05). They were however less likely to be afraid of seclusion and most likely to report that it was helpful (p&lt;0.05).</td>
</tr>
<tr>
<td>Country: US</td>
<td>Setting: voluntary non-locked psychiatric unit in a non-profit community teaching hospital.</td>
<td></td>
<td>• Number of times secluded.</td>
<td>Medication non-compliers were less likely to label the room safe and secure (p&lt;0.05).</td>
</tr>
<tr>
<td>Evidence level: 2+</td>
<td>Population: 50 consecutively secluded service users questioned shortly after release from an isolation room.</td>
<td></td>
<td>• If first time secluded.</td>
<td>Service users who used the room for the first time were more likely to report that it was stuffy (p&lt;0.05) and to describe it as torture (p&lt;0.05) than those who had used it previously.</td>
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<td>Excluded: those who were court-ordered temporary detention cases; too agitated for follow instructions; had organic conditions limiting comprehension of task.</td>
<td></td>
<td>• Fear of seclusion.</td>
<td>Service users with disorders other than depressive disorders were more likely to report that once in the seclusion room, it is difficult to get out (p&lt;0.05).</td>
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<td></td>
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<td>• Atmosphere of seclusion room.</td>
<td>Service users reported often finding the seclusion room helpful.</td>
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<td>• Assessment of therapeutic value of seclusion room.</td>
<td>30% viewed the room as relaxing.</td>
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<td>(All outcome measures were assessed through questions included in the survey).</td>
<td>65% felt safe in the seclusion room.</td>
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<td>Seclusion room was a lockable room with closed circuit TV monitoring and nurse inspections every 15 minutes.</td>
<td>50% suggested that these rooms are helpful to service users.</td>
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<td>45% felt they were treated like a prisoner.</td>
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<td>Only a small proportion of service users (10%) felt that there should be no such room.</td>
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<td>67% service users experienced the seclusion room as a safe and secure environment.</td>
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<td>Source</td>
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<td>Outcome measures</td>
<td>Results</td>
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</tr>
</tbody>
</table>
| Quirk et al. (2003) | Study 1: ethnographic (three year study) overt ‘researcher as participant’ study and 26 service user interviews. Study 2: data from a national audit concerned with the short-term management of violence was also included. Setting: study 1: three acute psychiatric wards; study 2: 73 acute wards. Population: study 1: adult service users, staff and service user advocacy workers (number not stated); study 2: staff, visitors and service users (number not known). To assess the strategies which service users employ to manage the risk of violence. | Study 1: Strategies from managing violence risk (grounded theory approach taken. Data analysed using QSR NUD*IST software.) Study 2: Audit responses to questions about triggers for violence on wards (content analysis using QSR NUD*IST software). | The most common strategies for service users managing risk reported from all sources were:  
  - avoiding risky situations  
  - avoiding service users who explicitly warned others to keep away  
  - finding a safe haven (like a bedroom)  
  - getting ‘specialled’ or not resisting it  
  - using de-escalation techniques  
  - allying themselves with someone high on the ‘pecking order’  
  - making risk assessments of other service users (including proactive information gathering)  
  - warning staff about another service user  
  - getting discharged.  
  - Avoidance tactics were harder to employ in certain circumstances, like the canteen. Here, service users had to reply more heavily on staff.  
  - The analysis from the audit suggested that many of the risks were directly attributable to other service users. However, the authors also illustrate how contextual and interactional determinants played an important role in violent incidents. |

**Reviewer’s comments**

- Authors report that some service users take an active role in attempting to make a safe environment for themselves and are not passive recipients of safety interventions by staff. They argue that, in part, this results from feeling unable to rely on staff to ensure their safety. However, the authors note that not all service users (particularly the acutely unwell) used proactive risk management strategies. Some service users adopted passive strategies, which were not considered in this study.
- Authors note that an ethnographic approach sacrifices breadth for depth. Authors comment that audit compensates for this to some extent, but since response rate was unknown, it is not possible to comment on the generalisability of the results.
- Whilst both studies have value, combining the results in the manner that the paper attempts to do seems questionable. The audit was undertaken prior to the ethnographic study, and it’s not clear that the two studies had similar aims. Whilst there are quality issues with this study they are not, however, overwhelming.
Svensson & Hansson (1994)
Country: Sweden
Evidence level: 2+

<table>
<thead>
<tr>
<th>Source</th>
<th>Study design</th>
<th>Aims of study</th>
<th>Outcome measures</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cross-sectional.</td>
<td>Setting: seven inpatient wards.</td>
<td>To assess the influence of personality traits, diagnosis and perceived coercion on service user satisfaction within inpatient psychiatric wards.</td>
<td>Patient satisfaction (assessed by self rating instrument).</td>
<td>86% expressed satisfaction with their key workers, 78% expressed satisfaction on the possibility of meeting visitors.</td>
</tr>
<tr>
<td>Population: 50/68 psychiatric service users.</td>
<td></td>
<td></td>
<td>Personality (assessed by Cearec-Marke personality scheme).</td>
<td>70% were dissatisfied with respect to information regarding their rights to read their case notes. 62% were dissatisfied with information on where to make complaints with respect to care.</td>
</tr>
<tr>
<td></td>
<td>People who were involuntarily admitted were less satisfied with care in the areas of staff-patient relationship, ward environment, treatment programme and general satisfaction (p&lt;0.001).</td>
<td></td>
<td>Demographic details.</td>
<td>Service users with a higher level of trait aggressive nonconformity were significantly less satisfied with the ward’s physical and psychosocial environment (p&lt;0.05), the treatment design (p&lt;0.05) and the treatment programme (p&lt;0.05).</td>
</tr>
</tbody>
</table>

Reviewer’s comments
- Authors argue that situational and environmental factors also need to be considered alongside service users’ characteristics when assessing service user satisfaction.
- Authors argue that service users with schizophrenia and those who perceive coercion in connection with in-patient psychiatric treatment require great attention in the development of quality assessment and quality assurance policies since these traits make it difficult to assess the validity of their responses.
- Authors suggest that a more detailed analysis of service user satisfaction according to diagnostic groups may reveal differences of value in the development of quality assessment and quality assurance policies.
- This study is of reasonable quality.
I. b Staff and service users’ perceptions

<table>
<thead>
<tr>
<th>Source</th>
<th>Study design</th>
<th>Aims of study</th>
<th>Outcome measures</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gillig et al. (1998)</td>
<td>Questionnaire survey.</td>
<td>To compare staff versus service user perceptions of the causes and emotional impact of verbal and physical aggression, and the corrective measures that each would endorse.</td>
<td>● Emotional responses.</td>
<td>● Staff considered verbal abuse of staff by service users as a more important contributor to physical aggression than service users (p&lt;0.05). Verbal abuse of service users by staff was seen as a more important contributor to physical aggression by service users than staff (p&lt;0.05). This pattern and significance was echoed in questions on hostility and threats.</td>
</tr>
<tr>
<td>Country: US</td>
<td>Setting: psychiatric in-patient unit.</td>
<td></td>
<td>● Demographic details.</td>
<td>● Staff stressed service user substance abuse (74%), intoxication (77%) and violent lifestyles (91%) as contributing factors.</td>
</tr>
<tr>
<td>Evidence level: 2+</td>
<td>Population: 54/60 male service users and 32/32 nursing staff (all female).</td>
<td></td>
<td>● Interventions supported.</td>
<td>● Service users stressed the use of drugs and alcohol by staff as causes of violence (p&lt;0.05).</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>● Physical aggression (measured by more in-depth questionnaire, filled in by last 20 consecutive service users and 30/32 staff).</td>
<td>● Service users stressed the use of forced medication (p&lt;0.05), restraints (p&lt;0.05) and seclusion (p&lt;0.05) as causes of violence</td>
</tr>
</tbody>
</table>

Reviewer’s comments
- Authors noted that the findings of the study suggest that staff and service users have different experiences of the unit milieu.
- The authors argue that service users should be debriefed after aggressive incidents and have access to discussion groups to resolve potentially explosive issues.
- This study was of reasonable quality.
<table>
<thead>
<tr>
<th>Source</th>
<th>Study design</th>
<th>Aims of study</th>
<th>Outcome measures</th>
<th>Results</th>
</tr>
</thead>
</table>
| Ilkiwa-lavelle (2003) | Qualitative-phenomenological.        | To examine the views of service users and staff involved in incidents of aggression to help understand emotions experienced, perceptions of causes and recommendations for ways of reducing the frequency of aggression. | • Characteristics of aggression.  
• Types of interventions used.  
• Perceived causes of aggression (staff and service users).  
• Recommendations to reduce aggression (staff and service users). | Characteristics:  
• physical aggression 38%  
• verbal aggression 58%  
• aggression directed at staff 51%; at other service users 20%; and at objects 27%  
• level and type of aggressive behaviour (Morrisons hierarchy), inflicted low grade harm requiring no medical care 31%; made a verbal threat with a plan to inflict harm 24%; or was loud and demanding 22%.  
Types of intervention used:  
• oral PRN medication 32%, seclusion 27%, time out 14%, IM injection 11%, restraining 9% and talking to service user 7%.  
Perceived causes of aggression:  
• patient illness factors - staff 59%; service users 33%  
• interpersonal conflicts - staff 36%; service users 15%  
• limit setting - staff 26%; service users 31%.  
Recommendations:  
• improved medical management of service users - staff 46%; service users 4%  
• improved handling of interpersonal conflicts - staff 32%; service users 64%  
• more flexibility in limit setting - staff 27%; service users 32%.  
Average fear rating for staff was low (Likert scale 0-5) 1.49 ± 0.66.  
Staff were moderately satisfied with management of the incident 6.7 ± 2.53 and 24% of service users were dissatisfied with management.  
64% of staff received debriefing (formal or informal) whereas 23.4 of service users received debriefing. |

**Reviewer’s comments**  
- Themes not supported by evidence from transcripts.  
- Some missing data and a small sample size.
<table>
<thead>
<tr>
<th>Source</th>
<th>Study design</th>
<th>Aims of study</th>
<th>Outcome measures</th>
<th>Results</th>
</tr>
</thead>
</table>
| Lanza & Kayne (1994) | Interviews.  | To compare the perceptions of assaultive service users and staff victims regarding assault incidents. | 10 objective items:  
  • nursing staff member’s role  
  • amount of contact  
  • number of people involved in the assault  
  • service user’s behaviour prior to the assault  
  • service user’s actions during the assault  
  • limit setting occurred  
  • type of limit setting  
  • physical contact prior to assault.  
  (It was hypothesised that staff and service users would agree over these).  
Eight subjective items:  
  • relationship between service user and staff member  
  • number of service users and staff who tried to intervene  
  • service user’s feeling expressed  
  • service user’s loudness  
  • cause of assault  
  • threats made by service user  
  • preceding conflict situation.  
  (It was hypothesised that staff and service users would not agree over these). | 13 pairs of completed interviews.  
There was agreement on six of the 10 objective items between staff and service users (staff role 8/11, frequency of contact 6/13, number of people involved 9/13, service user’s actions 6/8, limit-setting 8/13, physical contact with staff 9/13).  
There was disagreement between them on all eight subjective items. |
| Country: US          |              |                                                                               |                                                                                 |                                                                        |
| Evidence level: 2-   |              |                                                                               |                                                                                 |                                                                        |
| Population: staff and service users (not clear how many had organic brain disorder), 13 pairs of interviews undertaken. |                                                                                   |                                                                        |

Reviewer’s comments  
- It is not clear that the service user group in this study all fit within the scope of this guideline, as the authors note difficulties in carrying out several interviews due to possible organic brain disorder.  
- Authors argue that the term ‘contact’ needs clarifying for future studies, as it is unclear that staff and service users understood this term in the same way.  
- Authors acknowledge that the sample size is small.  
- Authors note difficulties in assessing and comparing feeling and did not include the responses in relation to the hypothesis that there would be a lack of agreement between staff and service users over subjective measures.  
- Authors argue that the hypotheses - that there would be agreement between staff and service users over objective measures and disagreement over subjective measures - were supported by the study.
<table>
<thead>
<tr>
<th>Source</th>
<th>Study design</th>
<th>Aims of study</th>
<th>Outcome measures</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roper &amp; Anderson (1991)</td>
<td>Qualitative: ethnographic.</td>
<td>To describe interactional variables that influence the incidence of violence.</td>
<td>• Researcher observations and reactions over six-month period based on ward (participant observation). • Open-ended questions on use of restraints.</td>
<td>The following themes were drawn from the data: • definition of violent behaviour • control - inner control and external control • out of control • interactions control and violence • emotional responses. Authors' conclusions: control was viewed as the pervasive theme underlying service user/staff interactions. The need for staff to exert external controls in response to lack of internal control from the service user. Staff responses to the service user’s behaviour included increased tension, helplessness/hopelessness, and counter-transference, which in turn elicited reactions from service users resulting in a potential for increasing violence.</td>
</tr>
</tbody>
</table>

**Reviewer’s comments**
- No respondent validation.
- Verification of findings data not reported.
- No participant information.
- Number of interviews performed not reported.
### Study design
- **Aims of study**: To assess the actual and perceived safety of male and female psychiatric service users.

### Outcome measures
- **Service users**:  
  - demographic details  
  - diagnostic categories  
  - experiences of intimidation, threatened or actual physical or sexual assault (in the preceding 12 months).

- **Nursing staff**:  
  - patient safety  
  - sexual or violent assaults on service users in the previous week (assessed by anonymous questionnaire).

- Medical notes and nursing notes were also examined for reports of harassment or assault.

### Results
- **Reliability of service user account was rated by interviewer.**
- **One hundred percent of service users and staff approached entered study. No service users were excluded due to unreliability of accounts.**

### Service users
- Seventy one percent reported some form of harassment, 39% had been hit at least once during their admission.
- Diagnostic categories were not associated significantly with a risk of victimisation.
- Women were more likely than men to report unwanted sexual comments or molestation (1/3).
- Two women alleged rape on the hospital grounds.
- Female service users were more likely than men to feel happy with staff responses, but were more likely to feel less safe.

### Staff
- 38% had witnessed a violent or sexual assault in the previous week.
- 65% reported being aware of other incidents.
- 75% rated themselves and service users as safe. A smaller proportion believed that service users felt safe.

### Reviewer’s comments
- Authors argue that the emphasis placed on staff victimisation may have led to the population who experience the greatest trauma - the service users - being overlooked.
- Authors note that the sample size and number of wards participating was small.
- Authors question the wisdom of mixed sex wards.
- The main quality concern with this study is the size. It is not possible to determine the likelihood of the results with such a small sample size. The study needs repeating elsewhere before any conclusions can be drawn.
- This study is of reasonable quality.
## II Ethnicity

<table>
<thead>
<tr>
<th>Source</th>
<th>Study design</th>
<th>Aims of study</th>
<th>Outcome measures</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chen et al. (1991)</td>
<td>Case control.</td>
<td>To investigate whether there are any differences between Afro-Caribbean and References non-Caribbean service users with regard to:</td>
<td>• differences in receiving neuroleptic medication</td>
<td>• More Afro Caribbeans than non-Caribbeans were treated with dosages above 2000mg of chloropromazine equivalent ($\chi^2=4.98$ p&lt;0.03) (not adjusted for confounding e.g. diagnosis).</td>
</tr>
<tr>
<td>Country: UK</td>
<td>Setting: Nottingham.</td>
<td>prescribed dosages of neuroleptic medication during the acute phase of the illness; the proportion started on depot maintenance therapy after a first episode of psychosis; the proportion admitted to hospital, the duration of admission and the use of compulsory procedures; the degree of behavioural disturbance in the acute stage of illness.</td>
<td>• relationship of medication to behavioural disturbance</td>
<td>• 33% (N=24) disturbed Afro-Caribbean service users received a maximum dosage of above 2000mg whereas none of the 12 disturbed non-Caribbean service users received this dosage. [p&lt;0.03, Fishers’s exact probability test].</td>
</tr>
<tr>
<td>Evidence level: 2-</td>
<td>Population:</td>
<td>• episodes of disturbance (violence and bizarre behaviour)</td>
<td>• compulsory detention.</td>
<td>• 24 Afro-Caribbeans and 12 non-Caribbeans had one or more disturbed episodes ($\chi^2=6.1$ p=0.01).</td>
</tr>
<tr>
<td></td>
<td>consecutive series of</td>
<td></td>
<td></td>
<td>• 15 Afro-Caribbeans and five Non-Caribbeans had two or more episodes ($\chi^2=5.4$ p=0.02). Time period for episodes not stated.</td>
</tr>
<tr>
<td></td>
<td>N=40 Afro-Caribbean and N=40 non-Caribbean service users, matched for age, sex and diagnosis - schizophrenia.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Reviewer’s comments**
- This appeared to be a matched case control study, though was not described as such.
- Data was obtained from chart records.
- Prescribing practice is not directly affected by simple ethnic stereotypes. However, some findings provide limited evidence to support concern about over prescribing to some Afro-Caribbean service users.
Violence: The Short-Term Management of Disturbed/Violent Behaviour in Psychiatric In-patient and Emergency Departments Guideline

### Source
- Choca et al., 1990
- Country: US
- Evidence level: 2-

### Study design
- Retrospective chart review.
- Setting: psychiatric ward, veterans' administration centre.
- Population: black 
  N=235 and white 
  N=471 male service users admitted over seven years.

### Aims of study
- To examine how successful the Millon clinical multiaxial inventory (MCMI) test was in producing a culturally fair test.
- Clinical fairness of diagnostic tool MCMI to predict psychopathology. (This personality instrument has weighted scores to provide different norms for black, white and Hispanic individuals to address potential racial bias).
- Items on MCMI were compared before and after grouping into matched pairs (N=209) of diagnostic categories according to DSM-111 (The diagnostic and statistical manual of mental disorders (3rd ed.) of the American Psychiatric Association) on discharge (seven groupings - substance abuse, anxiety, affective, character, psychotic, organic and 'other' disorders).
- Operating characteristics of white and black subjects for the different diagnostic categories (see table below).

### Outcome measures
- Operating characteristics of white and black subjects for the different diagnostic categories (see table below).
- Results of matched pairs - 45 items on the MCMI showed significant difference as opposed to an expected nine items, if the difference between the two groups was due to chance.
- Multivariate analysis of the 20 scales including antisocial (<.01) and passive-aggressive/explosive (ns) showed blacks scoring significantly differently from whites on nine scales (p<.05).
- To evaluate the structure of the test, factor analysis was conducted - three factor structure measuring a) maladjustment, b) extroverted acting out, c) psychosis.
- The factor congruence was .98, .98, .97 respectively, indicating high similarity. The factor analysis indicates that the test is measuring similar factors in both groups. Therefore support is maintained for continued use of the test for blacks with some adjustment at item and scale level. Confounding and potential limitations are discussed thoroughly.

### Reviewer’s comments
- Forms completed over seven-year period and may vary greatly in completion of data.
- Veterans are a specific group of individuals with military experience and therefore are a unique population.

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Personality disorder</th>
<th>Anxiety disorder</th>
<th>Affective disorders</th>
<th>Substance abuse</th>
<th>Psychotic disorder</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prevalence</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Whites</td>
<td>56%</td>
<td>7%</td>
<td>35%</td>
<td>47%</td>
<td>32%</td>
</tr>
<tr>
<td>Blacks</td>
<td>52%</td>
<td>3%</td>
<td>20%</td>
<td>55%</td>
<td>56%</td>
</tr>
<tr>
<td>Overall predictive power</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Whites</td>
<td>.55</td>
<td>.21</td>
<td>.43</td>
<td>.67</td>
<td>.54</td>
</tr>
<tr>
<td>Blacks</td>
<td>.52</td>
<td>.15</td>
<td>.36</td>
<td>.65</td>
<td>.57</td>
</tr>
<tr>
<td>Chi-square</td>
<td>.99</td>
<td>10.83</td>
<td>18.93</td>
<td>17.52</td>
<td>57.45</td>
</tr>
<tr>
<td>Significance</td>
<td>Ns</td>
<td>&lt;.01</td>
<td>&lt;.01</td>
<td>&lt;.01</td>
<td>&lt;.01</td>
</tr>
</tbody>
</table>

Note: Prevalence refers to the percentage of members of that race who were diagnosed as having the disorder. Sensitivity refers to the probability that the MCMI scale is elevated, given the presence of the disorder. Specificity refers to the probability that the MCMI scale is not elevated, given the absence of the disorder. Positive predictive power shows true positives; it indicates the probability that the presence of an MCMI scale elevation accurately predicts the presence of a disorder. Negative predictive power shows true negatives; it indicates the probability that the absence of an MCMI scale elevation accurately predicts the absence of a disorder. Overall diagnostic power shows proportion of cases correctly classified.
## Source Study design Country: US Evidence level: 2-
Chu et al. (1986) Prospective single sample, recruited over 3.5 years. Setting: seven state hospitals and mental health centres. Population: 275 consecutive schizophrenic admissions.

### Aims of study
To compare the differences in psychopathology between black and white schizophrenics.

### Outcome measures
Psychopathology measured by BPRS scale (brief psychiatric rating scale) and the Itil-Keskiner (Itil-Keskiner psychopathology rating scale). Differences measured between items on scales via Melvin Thorner structured interviews with four white and one black researchers.

### Results
- Black and white differences adjusted for sex due to potential confounding as ratio of male and female varied between black and white.
- Black male schizophrenics exhibited asocial behaviour more frequently than white male schizophrenics [black 58% white 36% p< .02.]. All other results for black males vs. white males were non-significant, including items for angry and outbursts. Results for females were more likely to be different black vs. white.

**Reviewer’s comments**
Authors note sex ratio in black service users different from white and adjusted for in analysis.
Study does not address the issue of possible observer bias in the test by researchers, as blinding of outcome assessors is not stated.
Coid et al. (2000)

**Source**
- Study design: Survey.
- Setting and population: N=3,155. All ethnic first admissions from 1988-1994 to all maximum and medium secure forensic services in seven of 14 regional health authorities. Included urban and rural areas, excluded those no fixed abode or if address inaccurate.
- To estimate population-based prevalence rates of treated mental disorders in different ethnic groups compulsorily admitted to secure forensic psychiatry services.

**Aims of study**
- Case information taken from notes obtained on visits to the hospitals.
- Black and Asian ethnic groups were compared to white service users, using logistic regression to adjust for independent variables - age, gender, marital status, social deprivation, primary diagnosis of personality disorder - and then stratified by ethnicity, according to criminal behaviour and behavioural disorder leading to admission, previous criminal history, previous institutional history, the source of referral for admission, and lifetime diagnoses.
- A sub group of 569 (21%) admitted for violent or difficult behaviour were compared by ethnic group on specific violent behaviour – for example, fire setting, sexual aggression. No differences found. Results not reported.

**Outcome measures**
- Losses=18 no data, 164 (5%) no fixed abode, three ethnicity not coded.
- Jarman under privileged area scores were used using postal code to score individual cases into UPA deciles. The prevalence rate denominator for the population was adjusted for under enumeration of young males in the census from which the population statistic was obtained, as they are of most interest to this study.
- Demographic ethnic: black=21%, white=74%, Asian=3%, other=2%.
- There were 5.6 times as many black males admitted than white males, and nearly three times as many black females as white females. 12 times as many black males and nine times more black females were admitted than Asians.
- See table below for most relevant results.

**Results**
- Loses=18 no data, 164 (5%) no fixed abode, three ethnicity not coded.
- Jarman under privileged area scores were used using postal code to score individual cases into UPA deciles. The prevalence rate denominator for the population was adjusted for under enumeration of young males in the census from which the population statistic was obtained, as they are of most interest to this study.

### Reviewer’s comments
Author’s note that these analyses under estimate the prevalence of treated mentally disordered offenders and represents the most serious cases only. Areas vary in the ability to provide locked wards i.e. low security.

### Selected population though ethnic differences have been previously reported in this population.

#### Comparison of black ethnic group with white ethnic group

<table>
<thead>
<tr>
<th>Variable</th>
<th>White</th>
<th>Black</th>
<th>OR Confidence Interval and P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>17%</td>
<td>9%</td>
<td>0.48 [0.36, 0.65] &lt;0.001</td>
</tr>
<tr>
<td>UPA deciles 9+10</td>
<td>54%</td>
<td>88%</td>
<td>6.31 [4.88, 8.15] &lt;0.001</td>
</tr>
<tr>
<td>Non crime admission</td>
<td>21%</td>
<td>16%</td>
<td>0.73 [0.58, 0.92] 0.008</td>
</tr>
<tr>
<td>Personality disorder  </td>
<td>20%  </td>
<td>5%  </td>
<td>0.22 [0.15, 0.31]</td>
</tr>
<tr>
<td><strong>Index offence</strong> Murder grievous bodily harm  </td>
<td>1.12 [0.89, 1.43] (Adjusted) ns  </td>
<td></td>
<td></td>
</tr>
<tr>
<td>Actual bodily harm, threats  </td>
<td>1.38 [1.10, 1.73] (Adjusted) 0.005  </td>
<td></td>
<td></td>
</tr>
<tr>
<td>Previous convictions  </td>
<td> </td>
<td></td>
<td></td>
</tr>
<tr>
<td>Violence  </td>
<td>1.73 <a href="Adjusted">1.44, 2.08</a> &lt;0.001  </td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Effects of lifetime diagnosis</strong>  </td>
<td> </td>
<td></td>
<td></td>
</tr>
<tr>
<td>Schizophrenia  </td>
<td>1.83 [1.48, 2.26] (Adjusted) &lt;0.001  </td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unspecified diagnosis  </td>
<td>2.41 [1.34, 4.34] (Adjusted) 0.003  </td>
<td></td>
<td></td>
</tr>
<tr>
<td>Borderline personality disorder  </td>
<td>0.23 [0.13, 0.45] (Adjusted) &lt;0.001  </td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Commander et al. (1997a)

**Source**

Commander et al. (1997a)

**Country:** UK

**Evidence level:** 2+

### Study design

Two single sample prospective cohort, nine month -13 months recruitment.

- Setting: four in-patient facilities in north Birmingham.
- Population: consecutive psychiatric admissions and discharged in-patients drawn from Asian, white and black (N=40 per group) communities.
- Severe mental disorder, aged between 16-60, no previous hospital in last month, present admission seven days.

### Aims of study

To provide an understanding of the pathway into in-patient psychiatric care; the treatment received during the time spent in hospital; and needs for care three months after discharge; by people from black and ethnic minorities, and their level of satisfaction.

### Outcome measures

- Demographic information, including history of violence, criminal activity and imprisonment.
- Pathways to care - to identify contacts, including police involvement.
- Insight.
- Information on admission procedures.
- Satisfaction.
- Social behaviour - social behaviour scale (SBS) and mental state Krawiecka and Goldberg scale (K&G).

From interview and medical records (interviews conducted by four female interviewers, one Asian, two black and one white).

### Results (1st sample)

- Demographics: mainly uniform across ethnic groups. More males in Asian group. More black service users lived alone. Majority of blacks and whites were single, whereas half of the Asians were married.
- Blacks were less likely to be receiving care from a health care professional prior to admission. Blacks had a more averse pathway - nearly two-thirds had some police involvement. Asians also had a high level of involvement with the police.
- No differences between groups on self reported history of violence.
- Satisfaction with in-patient treatment - Asians (75%), whites (60%) and blacks (39%) were satisfied ($\chi^2=13.3$ df=4 $p=0.01$).
- Risk behaviour: blacks scored significantly higher on incidence of violence to staff ($p=0.02$), and general public ($p=0.01$). Asians and blacks were more a risk to others (35%, 27%) than whites (15%).
- Blacks (68%) and Asians (58%) more likely than whites (29%) to be detained ($\chi^2=12.4$ df=2 $p=0.002$).
- SBS-Blacks scored significantly higher on measures of violence or threats or hostility and inappropriate sexual behaviour ($\chi^2=6.1$ $p=0.05$) and more likely to be rated with incoherent speech ($\chi^2=7.8$ $p=0.02$). Whites more significantly depressed with panic attacks ($\chi^2=14.5$ $p=0.0007$). Asians were more likely to be rated as having socially unacceptable habits or manners ($\chi^2=8.0$ $p=0.02$).
- Krawiecka & Goldberg Scale - whites were more depressed ($\chi^2=8.8$ $p=0.01$) and blacks were more likely to have elevated mood ($\chi^2=6.6$ $p=0.04$). This suggests either difference in presentation of psychopathology or possibly assessment of psychopathology.

### Reviewer’s comments

Pilot study had been conducted with adjustments made to schedules.
<table>
<thead>
<tr>
<th>Source</th>
<th>Study design</th>
<th>Aims of study</th>
<th>Outcome measures</th>
<th>Results (2nd sample)</th>
</tr>
</thead>
</table>
| Commander et al. (1997b) | Two single sample prospective cohort, nine month - 13 months recruitment.   | To provide a comprehensive understanding of the pathway into in-patient psychiatric care; the treatment received during the time spent in hospital; and needs for care three months after discharge; by people from black and ethnic minorities and their level of satisfaction. | - In-patient experiences (in-patient service questionnaire-reliability and validity of scale required).  
- Satisfaction.  
- Conducted by four female interviewers, one Asian, two black and one white.  
- Social behaviour - social behaviour scale (SBS) and mental state Krawiecka and Goldberg scale (K&G).  

Interviews and medical records (interviews obtained three months after discharge). | - Demographics similar except whites were more likely to be younger and female.  
- Similar to first sample.  
- Violence in past year - violence to family more likely to be Asians ($\chi^2=7.3$ $p=0.03$). Violence to staff more likely to be black ($\chi^2=8.6$ $p=0.01$). Blacks were also reported to be more violent towards other people whilst in-patients - 35% compared with 13% Asians and 10% whites. ($\chi^2=9.8$ df=2 $p=0.007$).  
- Blacks were also significantly more likely than either Asians or whites to be detained under the Mental Health Act and be confined to the ward.  
- Medication was non-significant.  
- Researchers had numerous difficulties throughout the study in getting staff to complete schedules. Described as chaotic and incomplete. Scales were not repeated. |

**Reviewer’s comments**

Some service users continued into second sample; others were new to the study.
<table>
<thead>
<tr>
<th>Source</th>
<th>Study design</th>
<th>Aims of study</th>
<th>Outcome measures</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Davies et al. (1996)</td>
<td>Cross-sectional annual prevalence study (1991).</td>
<td>To compare the risk of detention under the Mental Health Act 1983 in a representative group of people with psychotic disorders from different ethnic groups.</td>
<td>• For psychosis ICD 10 classification. &lt;br&gt;• Compulsory admissions collected from Mental Health Act offices. &lt;br&gt;• Ethnic group collected from case notes based on classification of the Office of Population Censuses and Surveys. &lt;br&gt;Half of all cases were random selected to self-identify ethnic group to validate the case record category.</td>
<td>• Annual period prevalence 1991. &lt;br&gt;• Demographic details for both black and white participants did not differ except black were younger: mean age 47.4=white, 35.3=black Caribbean, 31.2=black African. &lt;br&gt;Detention under the Mental Health Act: reference group white &lt;br&gt;• Black Caribbean OR 3.67 [2.07, 6.50] &lt;br&gt;• Black African OR 2.88 [1.04, 7.95] &lt;br&gt;(OR adjusted for age) &lt;br&gt;Black Caribbean participants were over three times more likely, and black African participants were nearly three times more likely to be detained under the Mental Health Act than white participants. They also were detained more often under sections 2, 3, and 136 of the Act. They were also more likely to be admitted to a psychiatric intensive care facility or prison.</td>
</tr>
<tr>
<td>Country: UK</td>
<td>Setting: two defined geographical areas in south London.</td>
<td>Population: identified 439 cases of psychotic disorders from all ethnic groups, from a wide range of sources - including hospitals, community, general practice.</td>
<td>Only five (1.1%) of the identified cases had been located from community sources alone.</td>
<td>Quality of study was good.</td>
</tr>
</tbody>
</table>

Reviewer’s comments

Quality of study was good.
<table>
<thead>
<tr>
<th>Source</th>
<th>Study design</th>
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<th>Outcome measures</th>
<th>Results</th>
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</thead>
</table>
| Dixon et al. (2000) | Retrospective chart review. | To explore the nature of the reasons for detention; the extent to which these were associated with service user characteristics; and the extent to which the two medical practitioners involved in each case agreed on their reasons (analysed by thematic content analysis). | • Reasons for detention.  
• Selected legal criteria for detention.  
• Demographic variables: gender, age, ethnic group and diagnosis.  
• Agreement of practitioners on reasons for detention. | • Black=18%, Asian=14%, white=61%, other ethnic=7%.  
• More men than women were described as a danger to others - 60% men 38% women $\chi^2=7.95$, p < 0.01  
• Ethnic collapsed into dichotomous variable white N=100 and ‘other ethnic’ N=63.  
• Significantly more ‘other ethnic’ people were described as a danger to others - 42% white and 60% ‘other ethnic’ $\chi^2=4.79$, p < 0.05.  
• A significant association was found between ethnicity and diagnosis, $\chi^2=12.62$, p < 0.05, suggesting that reasons for detention were based on ethnic (other ethnic) group.  
• A significant association was found between diagnosis, those with schizophrenia and non-compliance with medication as a reason for detention. $\chi^2=10.28$, p < 0.05.  
• In 22% of detentions, there appeared to some disagreement between professionals about the extent to which the service user was being detained for the protection of others.  
• The extent to which these results reflect inter-relationships between demographic and clinical variables or practitioners stereotypical assumptions remains unclear. |
| Country: UK     | Setting: inner city mental health trust.  
Evidence level: 2- | Population: all compulsory admissions under section 2 of the Mental Health Act 1983, within a 12-month period. N=163 detentions, equivalent to155 service users - M=49%, mean age 38 years. |  |  |

**Reviewer’s comments**  
• This study did not set out to determine racial bias. The ethnic group was collapsed and may under estimate effect of bias in detention, particularly in the case of Afro-Caribbeans.
### Source
Feinstein & Holloway (2002)

**Country:** UK

**Evidence level:** 2-

<table>
<thead>
<tr>
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</thead>
</table>
|        | Cross-sectional. | To examine the differences in reasons for admission and other characteristics amongst white, Afro-Caribbean and black service users. | • Demographic characteristics.  
• Psychiatric assessment - DSM-IV.  
• Global assessment of function scale (GAFS) via interviews on admission and discharge.  
• Ethnic comparisons - Asians excluded from analysis and the ethnic groupings were white, Afro-Caribbean and black African. | Demographic details: male =63%, white=48%, Afro-Caribbean=42%, black African=10%, Asian=3%.  
• 80% were compulsorily detained.  
• 40% were schizophrenic. There were no significant differences in demographics of age marital status or living setting between ethnic groups.  
• White and black African service users were more likely to have had a first admission than Afro-Caribbean service users \[\chi^2=8.8 \text{ df}=1 \ p=0.003\] and to be re-admitted, \[\chi^2=3.5 \text{ df}=1 \ p=0.06\].  
• GAFS: Afro-Caribbeans showed greater impairment on admission compared with white service users (p=0.05) and tended to have a longer stay.  
• Afro-Caribbeans were significantly more likely to be diagnosed with schizophrenia than white service users but not black Africans. \[\chi^2=7.8 \text{ df}=1 \ p=0.005\]. Whites were significantly more likely to be diagnosed with personality disorders \[\chi^2=9.3 \text{ df}=1 \ p=0.002\].  
• Authors state there were no differences in the occurrences of violent behaviour on the ward.  
• Afro-Caribbeans were significantly more likely to abuse cannabis than either white or black African service users \[\chi^2=27.9 \text{ df}=1 \ p=0.00001\]  
\[\chi^2=9.1 \text{ df}=1 \ p=0.002\].  
• More Afro-Caribbeans were detained under long-term treatment disorders (Section 3) than white service users \[\chi^2=3.6 \text{ df}=1 \ p=0.06\].  
• The unit had a high proportion of Afro-Caribbean service users who had a poor level of functioning on admission. The authors argue that the results do not support the view of systematic misuse of PICU and propose a number of possible explanations for the effect - for example, difficulties with engagement services, effects of cannabis use or alienation and conflict on open wards. |

**Reviewer’s comments**
This study was conducted in 1993. Study design was not clear.
<table>
<thead>
<tr>
<th>Source</th>
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<th>Outcome measures</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Hoptman et al. (1999)</td>
<td>Single sample prospective (three-month follow-up).</td>
<td>To investigate service user characteristics associated with the clinical prediction of assaultive behaviour.</td>
<td>• Variables (patient characteristics, including race), influencing clinician prediction are compared with those influencing actual assaultive behaviour. Violent incidents were measured by a modified scale for aggressive and agitated behaviours.</td>
<td>• Clinicians rate of correct prediction of assaultive behaviour = 71%, diagnostic sensitivity of 54% and specificity 79%. Race as a factor associated with clinical prediction was not associated with actual assaultive behaviour. African Americans were over represented in the predicted group, whereas Caucasians were under represented.</td>
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<td></td>
<td>Setting: forensic psychiatric hospital.</td>
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<td>Population: 183 male admissions.</td>
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**Reviewer’s comments**  
Authors state study sample different from other forensic populations, due to the proportion of ethnicity being higher. Consecutive sampling with 54% participation rate. Authors state no significant difference between participants and non-participants. There was a loss of 16 participants in the final sample. Authors state participants and non-participants did not differ.
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</table>
| Hutton et al. (1992) | Retrospective chart review.       | To investigate the applicability of the over-hostility scale to black service users, and its validity in a forensic setting, where psychological assessment is used to identify treatment needs of criminal offenders. | • Instant offence.  
• Psychiatric diagnosis.  
• Education.  
• Employment history.  
• Incidents of physical assault.  
• Race - comparing black vs. white, outcome is the difference. | • Race was the only variable to emerge as a determinant of over hostility (O-H) score.  
• Black service users had higher O-H scores than white service users.  
• F(1,410) = 23.726, p<.001.  
• A higher proportion of black service users exceeded the higher level T score 69 cut-off point in the scale’s interpretation of hostility, than white service users $\chi^2 (1, N=412) = 14.55$, p<.001.  
• Comparison of mean O-H scores by race and personality type (N=34 sub-sample) F(1,97) = 4.23, p<.05.  
• ANOVA comparisons of O-H scores of black and white service users by criminal history and by clinical problem type were non-significant, as were race x criminal history and personality x race interaction.  
• Potential confounders of education and socio-economic status were shown not to significantly predict O-H scores.  
• The findings indicate that using the O-H scale with black service users could lead to an erroneous interpretation of a propensity for aggressive or violent acts. |
| Country: US     | Setting: a maximum-security state forensic facility. | Population: 412 randomly selected male psychiatric in-patients and a randomly selected sub sample (224) to provide more in-depth information. |                                                                                           |                                                                                             |
| Evidence level: 2- |                                                                 |                                                                               |                                                                                           |                                                                                             |

**Reviewer’s comments**

No details given on randomisation procedure.

No information provided on race categories given as black and white; in the US, Hispanics are another important minority.
<table>
<thead>
<tr>
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</tr>
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</table>
| Kho et al. (1998) | Prospective with five-month follow-up. | To identify factors associated with aggressive incidents in psychiatric acute admission wards. | • Weekly reports on levels of aggression were ascertained by two nurses independently using MOAS (the modified overt aggression scale) of which the mean score = the overall aggression score (actual records =1147).  
• Factors potentially affecting aggression.  
• Patient factors – for example, gender, ethnicity, ward factors, effect of stage of admission. | • MOAS records N=1147.  
• Demographic variables were mean age 39, 55% male, ethnic-Caucasian=55%, Asian=15%, Afro-Caribbean=14%, 47% had schizophrenia and 13% an affective disorder.  
• No significant results were found for ethnicity and the authors conclude that the results provide little support for the stereotypical view of aggression being associated predominately with young Afro-Caribbean men diagnosed with schizophrenia.  
• This study found Asian service users displaying more aggression than others, which is not consistent with other studies. Both Asians and Afro-Caribbeans were of similar proportions on the wards. |

**Reviewer’s comments**

This has been reported in prediction review and therefore only relevant results to this review are included. Authors report that reliability of MOAS instrument would have been increased if specific training to staff had been given.
<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Lawson et al. (1984)</td>
<td>Prospective.</td>
<td>To test the hypothesis that racial bias in treatment decisions can be documented.</td>
<td>• Measures of violent behaviour undertaken by nurses with the modified lion scale*.</td>
<td>• Lion scale: black vs. white other p&lt;.0001.</td>
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<td></td>
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<td>• Inter-rater reliability. 84 by rank-order correlation</td>
<td>• Examination of assault data showed no blacks committed more than one act of violence, whereas 7% whites committed two or more acts.</td>
</tr>
<tr>
<td>Country: US</td>
<td>Setting: veterans’ administration centre (psychiatric).</td>
<td></td>
<td>• Psychopathology was measured by the brief psychiatric rating scale.</td>
<td>• There was no significant difference between race and psychopathology.</td>
</tr>
<tr>
<td>Evidence level: 2-</td>
<td>Population: consecutive admissions of in-patients 24 blacks and 93 whites.</td>
<td></td>
<td>• Neuroleptic dosages and serum levels and clinical response.</td>
<td>• Mean neuroleptic serum levels between black and whites was non-significant.</td>
</tr>
<tr>
<td></td>
<td>Sub-population consented to study of neuroleptic dosage, and serum levels, 10 black and 34 white.</td>
<td></td>
<td>Lion scale measures service user behaviour – for example, assault - and staff behaviour – for example, decision to seclude or restraint.</td>
<td>• Substantial and significant differences were noted in the behavioural measure of in-patient violence. Analysis dichotomised results into violence against others and violence against self.</td>
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<td>This study concludes that whites appear to be more violent, and make far more threats and to commit more self-destructive acts, whilst control for factors such as neuroleptic dosage and serum levels and psychopathology.</td>
</tr>
</tbody>
</table>

**Reviewer’s comments**
- US veterans are a unique group due to military experience.
- Small sample size, therefore findings lack statistical power and generalisability.
- Selection of participants not clear.
- Study design and analysis for control of confounding factors not clear.
<table>
<thead>
<tr>
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<th>Results</th>
</tr>
</thead>
</table>
| Lloyd & Moodley (1992)  | Cross-sectional survey.           | To survey psychotropic prescribing in the psychiatric in-patient population in order to discover factors associated with the decision to medicate, and whether ethnicity was an independent variable associated with the dose and type of medication. | • Medication data - type and dose collected from drug charts.  
• Disturbed behaviour- by staff assessment of service user’s notes.  
• Diagnosis – patient’s notes and ICD-9.  
• Compulsory detention                                                                 | • There was only sufficient data on 138 service users - 101 non-black and 37 black.  
• Black service users (62%) more likely to have clinical diagnosis of psychosis (ICD 291-299) than non-blacks (36%) Yates $\chi^2$ = 7.781 df=1, p=0.007.  
• Black service users 86.5% were more likely than non-black service users (60.4%) to be receiving anti-psychotic medication Yates $\chi^2$ = 7.243, df=1, p=0.007. Becomes non-significant when adjusted for diagnosis and compulsory detention. (62% of black service users are diagnosed with psychosis, whereas only 36% of non-blacks have psychosis, therefore this result is not unexpected).  
• Black service users with psychosis (56.8%) were significantly more likely to be receiving a depot preparation than non-blacks with psychosis (24.8%) $\chi^2$=12.482, df=1, p=0.001. Adjusted for ethnicity, age, sex, and diagnosis OR 1.18-2.72 p=0.006.  
• Significantly more black service users (67.6%) were detained under the Mental Health Act than non-blacks (29.7%) $\chi^2$=16.197, df=1, p=0.0001. Adjusted for age, sex, diagnosis, and violence history OR 1.97 p=0.002.  
• Black service users were more likely to have been involved a violent incidence during the index admission $\chi^2$=12.285, df =1, P=0.0001. Adjusted for age, sex, diagnosis OR 1.81 p=0.006.  
• There is a possible relationship for psychiatric in-patients between compulsory detention, disturbed behaviour, depot medication and being black, which is not satisfactorily explained by diagnosis alone. |
Population: all psychiatric in-patients on census day N=145. |                                                                              |                                                                                   |                                                                                                                                                                                                                                                                   |
| Evidence level: 2-      |                                    |                                                                               |                                                                                   |                                                                                                                                                                                                                                                                   |

**Reviewer's comments**

- Authors highlight the relationship of the influence on diagnosis and treatment. Reporting bias discussed as socio-demographic data was obtained from case notes.
Violence: The Short-Term Management of Disturbed/Violent Behaviour in Psychiatric In-patient and Emergency Departments Guideline

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>McNiel &amp; Binder (1995)</td>
<td>Retrospective chart review.</td>
<td>To evaluate characteristics of service users whom clinicians accurately assessed as being high or low risk for violence, and service users for whom clinicians over estimated or under estimated the risk</td>
<td>• Accuracy of clinicians’ estimates of the service users’ potential for violence</td>
<td>• This study has been reported in the prediction review and therefore only relevant data is reproduced here.</td>
</tr>
<tr>
<td>Country: US</td>
<td>Setting: locked, university-based, short-term in-patient psychiatric unit.</td>
<td></td>
<td>• Medical charts reviewed by eight staff and inter-rater reliability of kappa=0.75.</td>
<td>• A multinominal logit analysis was used to identify service user characteristics associated with accurate and inaccurate clinical assessment for potential violence.</td>
</tr>
<tr>
<td>Evidence level: 2-</td>
<td>Population: N=132 service users data from previous study (1988-89). Further 94 service users (1989-90) added to increase sample size N=226.</td>
<td></td>
<td>• Ratings on N=226 made by 60 physicians averaging four each. Scale of 0% (definitely will not attack someone) to 100% (definitely will attack someone).</td>
<td>• The risk of violence was over estimated among persons who were non-white: non-white service users were more likely to be false positives compared to true negatives. Also service users whose risk of violence was under estimated (false negatives) were more likely to be white, in contrast to those whose violence was over estimated (false positives).</td>
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<td></td>
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<td>• Violent behaviour measured on the overt aggression scale. In-patient violence restricted to acts of physical aggression against other people.</td>
<td>• See extracted table below.</td>
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<td>• False positive: non-white service users identified as high risk who were then violent.</td>
<td>• Those who are non-white (all those not of white race) are seven times more likely to be falsely predicted for violence and 57% less likely to be given the correct prediction classified as 'definitely will not attack anyone'.</td>
</tr>
<tr>
<td></td>
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<td></td>
<td>• False positives: non-white service users identified as high risk who were not violent.</td>
<td>• False negative: white service users identified as low risk who were then violent.</td>
</tr>
</tbody>
</table>

Reviewer’s comments
• Sampling strategy unclear.

<table>
<thead>
<tr>
<th>Variable</th>
<th>True negatives vs. true positives</th>
<th>True negatives vs. false positives</th>
<th>True negatives vs. false negatives</th>
<th>False positives vs. true positives</th>
<th>False positives vs. false negatives</th>
<th>True positives vs. false negatives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Odds ratios and confidence intervals</td>
<td>OR 0.69 CI [0.27-1.78] ns*</td>
<td>OR 0.43 CI [0.27-0.83] ns</td>
<td>OR 3.04 CI [0.66-13.91] ns</td>
<td>OR 1.63 CI [0.65-4.08] ns</td>
<td>OR 7.15 CI [1.50-34.11] ns</td>
<td>OR 4.38 CI [0.83-23.07] ns</td>
</tr>
<tr>
<td>Source</td>
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<tr>
<td>Minnis et al. (2001)</td>
<td>Survey-postal questionnaire.</td>
<td>To establish whether racial stereotyping occurred amongst British psychiatrists</td>
<td>A selection of questions asked:</td>
<td>823 were contactable. Response rate was 59% (N=485 available for analysis. (10% of British psychiatrists). The power of the study to detect an expected mean (SD) risk of violence of 2.41 (1.76) vs 2.87 (1.53) is given as 85% at the 5% level.</td>
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<tr>
<td></td>
<td>Setting: UK.</td>
<td>in rating black service users as more violent than white service users, when</td>
<td>• risk of violence to others</td>
<td>Black N=232 White N=253 Risk of violence to others 20.4 19.9 p=0.005</td>
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<tr>
<td></td>
<td>Country: UK</td>
<td>shown either a picture of a black man or a white man.</td>
<td>• likely diagnosis, for example, schizophrenia</td>
<td>Likely diagnosis, for example, schizophrenia 17.3 13.5 p=0.0001</td>
<td></td>
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<tr>
<td></td>
<td>Evidence level: 2-</td>
<td></td>
<td>• likely to be a management problem</td>
<td>Management problem 16.1 16.6 p=0.001</td>
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<tr>
<td></td>
<td>Population: random sample of 1,000 British</td>
<td></td>
<td>• rapport likely to be difficult to establish.</td>
<td>Rapport difficult to establish 18.3 16.2 p=0.01</td>
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<tr>
<td></td>
<td>psychiatrists obtained from the Royal College of</td>
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<td>Likely to ask: Had a criminal record 16 15 ns</td>
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<td></td>
<td>Psychiatrists’ database.</td>
<td></td>
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<td>Had recently used illegal drugs 96 96 ns</td>
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<td>Authors conclude psychiatrists did not rate black service users as more violent than white, though they were more likely to ask other questions of black service users, such as need for learning support and social work. They conclude racial stereotyping at first interview does not account for the inequalities seen in secondary care.</td>
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<tr>
<td>Source</td>
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<tr>
<td>Morley et al. (1991)</td>
<td>Qualitative.</td>
<td>To gain descriptive information about the problems faced by Afro-Caribbean</td>
<td>• Present state examination (PSE).</td>
<td>• 40 service users met inclusion criteria. PSE not obtained on five service users. Eight refused permission to interview relative. Two relatives declined to be interviewed. Total sample for analysis was of 25 (10 informal and 15 compulsorily detained service users).</td>
<td></td>
<td></td>
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<tr>
<td>Country: UK</td>
<td>Setting: three inner London health districts. Population: consecutive admissions (over nine-month period) of Afro-Caribbean service users experiencing psychotic symptoms in regular contact with relative or partner. (This included 10 informally admitted patients and 15 compulsorily admitted patients). Excluded: organic base for diagnosis and relative with psychosis.</td>
<td>families with a psychotic member in the early stages of illness, and to test hypotheses about their influence on the process of admission.</td>
<td>• Disturbed behaviour rating scale with added questions on dangerousness of service user prior to admission.</td>
<td>Demographic=60% male, informal mean age 27 and mean age of compulsory group 33. 76% born in West Indies but all had been living in the UK for at least 20 years.</td>
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<tr>
<td>Evidence level: 2+</td>
<td></td>
<td></td>
<td>• Difficulties and beliefs – open-ended questions.</td>
<td>60% of relatives were mothers and 40% were either wives, husbands, children or siblings.</td>
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<td></td>
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<td></td>
<td>• Attitudes to psychiatric hospitals’ questionnaires compiled for study.</td>
<td>Comparisons between dangerous and non-dangerous - 56% of ‘dangerous group’ relatives wanted help quicker. 67% wanted their relative to be persuaded to take medication. 53% of compulsory detained service users were not considered to be dangerous by their relative. Twice as many relatives attributed the difficulties to stress.</td>
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<td></td>
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<td></td>
<td>• Help and satisfaction with help.</td>
<td>Relatives’ explanations for service users’ behaviour - no differences between informal and compulsory detained.</td>
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<td>Attitudes to services – more than 50% of sample of relatives thought being in psychiatric hospital was like prison; however 64% thought hospital was a good place to get away from it all.</td>
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<td>Path of admission - 60% of admissions occurred within a month of the onset of symptoms</td>
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</tbody>
</table>
|                  |                            |                                                                                 |                                                                                  | Conclusion: the study revealed police involvement was associated not with relative need, but with initial response of health or social care professional and their expectations of dangerousness in the service user. Although the hypothesis did not set out to test this. | Reviewer’s comments:  
- Well-conducted study.  
- No respondent validation.
<table>
<thead>
<tr>
<th>Source</th>
<th>Study design</th>
<th>Aims of study</th>
<th>Outcome measures</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Reubin et al. (1997)</td>
<td>Retrospective chart review.</td>
<td>To examine the relationship of serum creatine kinase (CK) levels with aggressive behaviour, as a function of psychosis and ethnicity, in a sample of violent forensic service users.</td>
<td>• CK levels taken routinely on admission.</td>
<td>• Demographic variables: mean age 28.7yrs, 53% Caucasian, 36% African American and 11% Hispanic.</td>
</tr>
<tr>
<td>Country: US</td>
<td>Setting: forensic hospital, maximum-security.</td>
<td></td>
<td>• Continuous monitoring of violence using the overt aggression scale undertaken by nurses, provides a mean severity score. Frequency of aggression and type of aggression recorded. MANOVA analysis.</td>
<td></td>
</tr>
<tr>
<td>Evidence level: 2-</td>
<td>Population: male consecutive admissions N=195.</td>
<td></td>
<td>• Other variables: age, weight, height, blood pressure. Use of restraints, intramuscular injections (IM), history of drug or alcohol abuse and diagnosis of schizophrenia on admission. Chi square and t-test analysis.</td>
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</tr>
<tr>
<td></td>
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<td></td>
<td>CK is an indication of muscle tissue abnormalities.</td>
<td>• 164 provided CK samples; a further 22 were excluded from this sample as ethnicity did not fall into two categories of Caucasian and black African.</td>
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<tr>
<td></td>
<td></td>
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<td></td>
<td>• Further exclusions were made due to CK level outliers three Caucasian and six black African American. Results based on N=133.</td>
</tr>
<tr>
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<td></td>
<td>• African Americans and Caucasian service users differed in CK levels after adjusted for type and frequency of aggression.</td>
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<td>• CK levels for African American service users diagnosed on admission as schizophrenic (n=33; CK=160.1 ± 107.2 t (53) =2.3 p&lt;.05) differed significantly from those without this diagnosis (n=22; CK 106 ± 33.1). Caucasian service users with schizophrenia (n=41; CK 90.6 ± 71.5; t (75) =-.122, p=.90.</td>
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<td></td>
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<td>• Did not differ from Caucasian service users without such a diagnosis (n=36; CK=87.8±55.2).</td>
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<td></td>
<td>• The authors propose that serum CK differences between African Americans and Caucasians represents a unique physiological reaction to chronic psychological stress. It may be a biological marker of aggression, with different manifestations in various ethnic studies.</td>
</tr>
</tbody>
</table>

**Reviewer’s comments**

- A detailed discussion sets out the consistency for these results in the context of other studies and other hypotheses that have been explored. No other subsequent studies have been identified.
- There is an attempt to establish a temporal relationship between CK and aggression-aggression raising CK levels or CK provoking aggression. For example, raised levels of CK are part of neuro-biological response and results in more physically aggressive behaviour. The causal pathway is not clear.
- It is noted in the study that similar results have been found in non-psychiatric service users of black African origin.
<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Secker &amp; Harding (2002)</td>
<td>Qualitative. Setting: mental health resource centre in one London borough. Population: a purposive selection of the sample was taken to ensure a cross-section in terms of gender, age and diagnosis of clients. N=26.</td>
<td>To explore the in-patient experiences of African and Afro-Caribbean clients.</td>
<td>• Patient stories of involvement with services, what was helpful, unhelpful, what would have helped more. Data analysis - interviews transcribed tapes - a staged content analysis using WINMAX.</td>
<td>• 26 in-depth interviews (no drop-outs). • Demographic -16 male, two-thirds 25-44 years, 18 African Caribbean and six African. Average length of contact five years. 16 with diagnosis of schizophrenia. • Analysis represents subject’s most recent experience, with themes that included: loss of control, experiences of racism, and relationships with staff. • Lack of access to talking treatments, coupled with reliance on medication to control and contain inappropriate behaviour. • Sense of powerlessness and no adequate redress for unsatisfactory treatment. • Overt and covert racism - for example, not being understood. • Reference to black male stereotypes. • Positive accounts of relationships with staff are rare. • Participants bewildered and sad at lack of therapeutic relationships.</td>
</tr>
</tbody>
</table>

**Reviewer’s comments**
- No respondent validation or piloting of developed interview schedule.
- Methodology clearly set out and data analysis thorough.
### Study Design

**Source**
Sheehan et al. (1995)

**Country:** UK

**Evidence level:** 2-

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Retrospective chart review comparison of two geographical areas. Setting: all acute general psychiatric wards in an inner city hospital (n=48 beds) and all the psychiatric wards at semi-rural hospital district general hospital (n=35 beds). Population: all violent incident forms for a 12-month period.</td>
<td>To examine the association of ethnicity on the rate of violent incidents in a socially deprived catchment area.</td>
<td>- Number of incidents. - Serious of incidents - grade - involving no damage - involving only minor damage or injury not requiring treatment - representing serious damage to property or injury requiring treatment. - Ethnicity of perpetrators.</td>
<td>Total incidents - 50 at inner city hospital and 41 at semi rural. Inner Semi-rural 43 29 11 1 1 1 1 1 1 1 1</td>
</tr>
</tbody>
</table>

**Reviewer’s comments**
- It is unclear as to how many individuals carried out incidents.
### Source
Silver (2000)

### Study design
Prospective cohort – 20-week follow-up.

**Setting:** Pittsburgh site of the Mac Arthur Foundation’s violence risk assessment study (Psychiatric Institute).

**Population:** N=270 discharged psychiatric service users including civil admissions, 18-40 years, English speaking, African American or white, with range of psychiatric diagnoses.

### Aims of study
To examine the effects of race and neighbourhood (locality of residence) disadvantage on violence among persons with mental disorders.

### Outcome measures
- Violence measured on the conflict tactics scale measured 20-weeks post discharge and including re-hospitalisation data.
- Ethnic self-report.
- Neighbourhood disadvantage - taken from 1990 census summary. Tape files - boundaries are drawn to encapsulate relatively homogeneous populations, details of which are outlined in the paper. Factor analysis was used to reduce possible components to a manageable number.

### Results
- 270 service users constituted 145 neighbourhoods. Neighbourhoods divided into three categories – low n=42, average n=184 and high disadvantage n=44.
- 33.3% of sample = African American, 90.9% were in the high group and none were in the low group.
- African Americans were 2.7 (OR) times more likely to be violent than whites. However when adjusted for by neighbourhood disadvantage, this was reduced to 1.28 (OR) - this was significant p<0.05. Thus African American and White service users residing in comparably disadvantaged neighbourhoods showed no differences in their rates of violence.

### Reviewer’s comments
- This study deals with in-patients discharged from the hospital and is community-based for the follow-up period of the study. However the contextual neighbourhood measurement seems relevant whether in or out of hospital. ‘Neighbourhoods’ is relevant in UK context. This study is reported as it attempts to show confounding according to locality of the individual’s residence and how this may affect reporting of results of violent incidents.
### Source

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Strakowski et al. (1993)</td>
<td>Retrospective chart review.</td>
<td>To investigate whether clinical over-diagnosis of schizophrenia in non-white service users exists in the public sector, and whether co-morbid diagnoses contributed to primary diagnoses.</td>
<td>• Diagnosis and co-morbidity (drug, alcohol and other psychiatric diagnoses) measured by DSM-III-R. &lt;br&gt;• Discharge dose of anti-psychotic medication given in haloperidol equivalents.</td>
<td>• Black service users were diagnosed with schizophrenia more than white service users by clinicians OR 5.1 (adjusted for sex, drug abuse, alcohol abuse) CI [2.4-10.] p&lt;.0001. &lt;br&gt;• Type and frequency of co-morbid diagnoses did not differ significantly between races. &lt;br&gt;• Anti-psychotic medication was prescribed in higher doses to black service users than white t=3.3, df= 171, p=.001. &lt;br&gt;• Authors state there may be possible racial bias, as diagnosing service users can be a learnt behaviour, or black service users present with different symptom intensity or type than white service users.</td>
</tr>
</tbody>
</table>

### Country: US

- **Evidence level:** 2-
- **Setting:** large public hospital in Tennessee (excluding forensic).
- **Population:** 173 service users with primary diagnoses of psychotic disorders.

### Reviewer’s comments

- Note that ethnicity of clinicians diagnosing – two black, two Indians and one Filipino.
- Clinicians’ use of DSM-III-R not determined or validated.
- Selection of racial grouping not clear.
<table>
<thead>
<tr>
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</tr>
</thead>
</table>
| Strakowski et al. (1995) | Retrospective chart review.                | To observe whether there are racial differences in diagnosis and disposition (referral for treatment) of service users visiting a psychiatric emergency service. | • Diagnosis measured by DSM-III-R.  
• Disposition (referral for treatment) for example, public or private, in-patient, outpatient, other agencies.  
• Other information obtained included: substance abuse, use of physical restraints and restraint medication, homicidal ideation. | Staff racial mix  
Nurses  
Social workers  
Clinicians  
Black race was significantly associated with schizophrenia compared to whites: OR= 1.6 CI [1.0, 2.5] p=.03 adjusted for age, sex and insurance status (SES), socio-economic status. Male sex was significantly associated with schizophrenia OR =2.3 CI [1.5, 6.0] p=.0003.  
• Age was significantly associated with schizophrenia: OR=2.3 CI [1.5, 3.6] p=.0003.  
• Black race was significantly associated with state hospitalisation OR =2.7 CI [1.3, 5.5] p=.006 adjusted for diagnosis, age, sex, insurance status, suicidal and homicidal ideation scores. Suggesting that blacks were more likely to receive hospital treatment rather than whites. |
| Evidence level: 2-   |                                            |                                                                               |                                                                                  |                                                                                                                   |

**Reviewer’s comments**

- Follow-up to previous 1993 study.
- Authors propose limits on generalisability of these findings due to limits of diagnostic procedure and insurance status is not s sensitive measure for SES.
### Wilson & Francis (1997)

**Country:** UK  
**Evidence level:** 2-

<table>
<thead>
<tr>
<th>Source</th>
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<th>Aims of study</th>
<th>Outcome measures</th>
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</tr>
</thead>
</table>
| Wilson & Francis (1997) | Descriptive survey (no follow-up). | To offer a snapshot of African-Caribbean and African people experiences of mental health services. | Postal questionnaire with a mix of closed and open questionnaires on diagnosis, nature of services received, experiences of social exclusion and discrimination and views on mental health services. | - 1,000 sent out 100 returned =10% response rate.  
- 43% diagnosed with schizophrenia.  
- 53% referred by GP.  
- 18% under the MHA.  
- 17% referred by police.  
- 15% self-referral.  
- Most common form of treatment was psychiatric hospital (85%), 19% had special hospital or medium secure unit experience.  
- 95% had been treated with drugs.  
- 66% found their key worker helpful.  
- 36% felt that no mental health professionals actually were aware of their cultural and ethnic origin.  
- 36% expressed dissatisfaction with treatment.  
- 36% stated being sectioned because of their ethnic origin (36% of 18%). |

**Reviewer’s comments**  
Not a representative response. Authors express the view that the low response rate reflects that the questionnaires did not reach the recipients, rather than a refusal to respond.  
Authors conclude African Caribbeans/Africans surveyed feel misunderstood because they are feared, stereotyped or ignored. The stereotypes operate in complex ways as people are seen as black, mad, dangerous and inadequate.
### III Gender

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Binder &amp; McNiel (1994)</td>
<td>Survey. August 1988 to May 1991.</td>
<td>To determine whether male or female doctors or nurses were more at risk from assaults in acute psychiatric in-patient units</td>
<td>Assaults reported on routine behaviour checklist completed by nurses at the end of each shift.</td>
<td>Staff gender was not associated with the risk of being assaulted for doctors, nurses or both disciplines together. Nurses were more likely to be assaulted than doctors. Percentage of staff in this category who were assaulted: Nurse 62.5% male 58.8% female. Doctor 8.1% male 3.4% female.</td>
</tr>
<tr>
<td>Country: USA</td>
<td>Setting: 16-bed locked university-based short-term psychiatric in-patient unit (only 13% of service users hospitalised voluntarily).</td>
<td>Population: 83 doctors and 120 nurses (72% female).</td>
<td></td>
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<tr>
<td>Evidence level: 2-</td>
<td></td>
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</table>

**Reviewer’s comments**
- Of the assaultive service users, 43% were men and 57% were women, but the paper does not record the number of men and women on the wards or male and female service user days.
<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Lam et al. (2000)</td>
<td>Case control study, nine months.</td>
<td>To examine the relationship between service user gender and violence resulting in injury to staff.</td>
<td>• Reports of injury caused by a service user’s violent behaviour, filed routinely in risk management office.</td>
<td>Gender was not associated with risk of injuring staff.</td>
</tr>
<tr>
<td>Country: USA</td>
<td>Setting: locked university-based short-term psychiatric in-patient unit.</td>
<td></td>
<td></td>
<td>Injured staff:</td>
</tr>
<tr>
<td>Evidence level: 2+</td>
<td>Population: 76 service users who injured staff members and 314 service users hospitalised during the same period, who did not injure staff.</td>
<td></td>
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<td>42 (20%) male</td>
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</tbody>
</table>
<pre><code>                                                                          |                                                                                   |                                                                                   |                                                                                   | 34 (18%) female.                                                                                 |
                                                                          |                                                                                   |                                                                                   |                                                                                   | Did not injure staff:                                                                             |
                                                                          |                                                                                   |                                                                                   |                                                                                   | 163 (80%) male                                                                                   |
                                                                          |                                                                                   |                                                                                   |                                                                                   | 151 (82%) female                                                                                 |
                                                                          |                                                                                   |                                                                                   |                                                                                   | Total                                                                                           |
                                                                          |                                                                                   |                                                                                   |                                                                                   | 205                                                                                             |
                                                                          |                                                                                   |                                                                                   |                                                                                   | 185                                                                                             |
</code></pre>
<p>| Reviewer’s comments    |                                                                                   |                                                                                   |                                                                                   | A history of recent violent behaviour or non-compliance with medication was significantly associated with risk of injuring staff. |</p>
<table>
<thead>
<tr>
<th>Source</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Thomas et al. (1995)</td>
<td>Cross-sectional, one-off survey.</td>
<td>To describe the victimisation experiences of psychiatric in-patients.</td>
<td>• Patients’ experience of intimidation, threatened or actual physical or sexual</td>
<td>• 47% of service users interviewed were female; 53% male.</td>
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<tr>
<td></td>
<td>Country: UK</td>
<td></td>
<td>assault over the past year of their admission, or the duration of the current</td>
<td>• 71% reported harassment by other service users (68% of males and 75% of females,</td>
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<td></td>
<td>Evidence level: 2-</td>
<td></td>
<td>admission.</td>
<td>not significantly different).</td>
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<tr>
<td></td>
<td>Setting: psychiatric hospital.</td>
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<td></td>
<td>• 39% reported having been hit (42% of males and 36% of females, not significantly</td>
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<tr>
<td></td>
<td>Population: 59 psychiatric in-patients (31 males,</td>
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<td></td>
<td>different).</td>
</tr>
<tr>
<td></td>
<td>28 females).</td>
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<td></td>
<td>• 19% reported sexual molestation (32% of females and 7% of males, p=0.01); most of</td>
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<tr>
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<td></td>
<td></td>
<td>these incidents were not reported to staff.</td>
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<tr>
<td></td>
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<td></td>
<td>• Fewer females felt safe on the wards (57% vs. 81% of males, p=0.05).</td>
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<td>• More females were satisfied with the staff response when they did report an incident</td>
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<td>(25% vs. 7% of males, p=0.05).</td>
</tr>
</tbody>
</table>

**Reviewer’s comments**
- Small sample size, representing only 39% of eligible service users.
### 5.5 De-escalation techniques

<table>
<thead>
<tr>
<th>Source</th>
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</tr>
</thead>
</table>
| Jambunathan et al. (1996)| Three-month prospective observational study (pilot) without controls (purposive sample of observed incidents). | To examine the extent to which de-escalation techniques taught at the National Crisis Prevention Unit mitigated the need for mechanical restraint and seclusion. (N.B. - level 3 includes physically restraining the service user). | 51-item CPI instrument (good inter-rater reliability (Cronbach alpha reliability = 0.62. Alpha reliability on 13 units was 0.68) The content validity established by experts) designed to assess:  
  - staff use of taught techniques that averted the need for restraint and/or seclusion noted  
  - extent to which techniques appropriate to four levels of escalation applied (see description in summary). |  
  - 146 service user incidents observed.  
  - 84% of the incidents mechanical restraint and/or seclusion not employed.  
  - More than 50% of incidents occurred on admission units and lasted one -10 minutes.  
  - Debriefing techniques only mentioned in 28% of incidents. (Specific techniques 45% of these).  
  - Chi-squared 76.6% service user behaviour cues and 69.4% staff interventions at level 2.  
  - t test used to examine staff intervention at each level. Six interventions correlated positively with appropriate CPI technique (p< 0.5).  
  - No significant difference in staff intervention between wards except at defensive level of intervention.  
  - Adult treatment units differed significantly at all four levels of intervention from adult admission units and differed from multiply impaired treatment units at defensive level of intervention (no p values given).  
  - Study appears to reflect literature, service user with schizophrenia most often violent. Training reduces the amount of seclusion and restraint.  
  - CPI techniques were used in resolving crisis in 84.3% of all episodes observed. |

**Reviewer’s comments**

- Potential for bias as observers were new staff. Report does not clearly separate the different units observed in reporting.
- Some wards received more observation than others - the amount is not specified.
- Not known if severity of illness contributed to service user incidents.
- Author notes that some staff used level 3 interventions for level 1 cues.
<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Johnson et al. (2001)</td>
<td>Qualitative</td>
<td>To gauge how expert nurses de-escalate the escalating service user.</td>
<td>Unstructured interviews used to determine: • signs related to escalation. De-escalation methods not stated.</td>
<td>• Nurses stressed the importance of connecting and staying connected with service user, and engaging in process of calming service users, rather than simply reacting. • Nurses notice early behavioural and verbal signs and interpret in relation to their knowledge of psychopathology. • Nurses felt they were able to determine where a service user was on the continuum of escalation, by their experience.</td>
</tr>
<tr>
<td>Evidence level: 2-</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Reviewer’s comments**
- Small sample, results not generalisable.
- Includes nurses from a variety of clinical areas.
- Authors stress that there is no one correct way of interpreting the data generated from the interviews.
<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>Richmond et al. (1996)</td>
<td>Before and after (using historical second sample).</td>
<td>To decrease the use of restraint (physical and mechanical) and seclusion, and reduce injuries related to managing assault, by training in use of alternative interventions.</td>
<td>Decreased use of restraint and seclusion.</td>
<td>Before programme = 3,783 events; after programme, at 12 months= 873 incidents of disruptive behaviour.</td>
</tr>
<tr>
<td>Country: USA</td>
<td>Setting: veterans’ medical centre (120 psychiatric in-patient beds).</td>
<td></td>
<td>Increased use of alternative interventions.</td>
<td>All units showed a decrease in restraint use - overall 47% decrease.</td>
</tr>
<tr>
<td>Evidence level: 2-</td>
<td>Population: audit on number of S&amp;R events.</td>
<td></td>
<td></td>
<td>Seclusion and restraint decreased by 31% overall, although two units saw a rise in seclusion.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Most popular alternative intervention was de-escalation (33%).</td>
</tr>
</tbody>
</table>

**Reviewer’s comments**
- Authors conclude that verbal interventions help reduce need for restraint and seclusion.
- Study design is non-experimental; confounders are not explored.
- Includes mechanical restraints.
- No socio-demographics given.
5.6 Observation

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Bowers et al. (2000)</td>
<td>Random, stratified sample survey.</td>
<td>To ascertain how observation is applied, and nature, content and variation of</td>
<td>• Content of policies.</td>
<td>Results show that there was no consistency amongst trusts:</td>
</tr>
<tr>
<td>Country: UK</td>
<td>Setting/Population: 27 NHS trusts in England and</td>
<td>policies on observation in NHS in England and Wales.</td>
<td>Questionnaire (modified after comments from advisory group).</td>
<td>• 88% respondents have policy on constant observation (CO).</td>
</tr>
<tr>
<td>Evidence level: 2-</td>
<td>Wales with mental health trusts.</td>
<td></td>
<td>Trusts identified with random number table.</td>
<td>• Respondents all said policies in imminent need of review.</td>
</tr>
<tr>
<td></td>
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<td>• 37% used systematic risk assessment tools in conjunction with CO.</td>
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<td>• 46% kept no central records of CO.</td>
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<td>• 38% no clinical recording system.</td>
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<td>• 54% kept systematic central records and it was reviewed regularly.</td>
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<td>• Out of 26 policies supplied, only two used the same terminology ('close' had different meanings in different locations, one meant either high or low levels of observation) Differences also existed between official policy and questionnaire responses.</td>
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<td>• 50% CO initiated by nurses (medical staff also in most of these).</td>
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<td>• 50% joint medical/nurses’ decision.</td>
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<td>• 63% termination by joint medical/nurse decision.</td>
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<td>• Most respondents stated CO could be applied to all service users, but service users who objected would be considered</td>
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<td>for compulsory detention.</td>
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<td>• 29% often used agency nurses to carry out CO.</td>
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<td>• 24% allowed student nurses to carry out all levels of CO, 43% allowed some levels, 33% didn't allow.</td>
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<td>• 55% allowed family members to carry out some levels.</td>
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<td>• Policies differed over whether service users should be confined to ward.</td>
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<td>• Average duration of CO=72 hours (10 days longest; rare occasions up to 100 days).</td>
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<td>• Most common problems to implementing CO= lack of staff and money.</td>
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<td></td>
<td>• Gender was almost always considered (female staff to female service users when bathing).</td>
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<td>• Religion not considered.</td>
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<td></td>
<td>• Language problems with non-English speaking service users noted.</td>
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<td></td>
<td>• Aims of CO (1) to reduce risk or self-harm (2) prevent aggressive behaviour or absconding.</td>
</tr>
</tbody>
</table>

Reviewer’s comments

• Authors conclude that guidance from the Department of Health on observation is vital.
<table>
<thead>
<tr>
<th>Source</th>
<th>Study design</th>
<th>Aims of study</th>
<th>Outcome measures</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bowles &amp; Dodds (2001)</td>
<td>Before and after study without controls.</td>
<td>To assess the therapeutic value of dismantling formal observation and replacing it with one-to-one interaction and activities.</td>
<td>Levels of:&lt;br&gt; - suicides&lt;br&gt; - absconding&lt;br&gt; - staff&lt;br&gt; - self-harm&lt;br&gt; - use of staff time&lt;br&gt; - costs.</td>
<td>After six months&lt;br&gt; - Formal observation rare.</td>
</tr>
<tr>
<td></td>
<td>Country: UK Evidence level: 2-</td>
<td></td>
<td></td>
<td>After 18 months&lt;br&gt; - One-to-one observation never used; five-10 minute checks rare.</td>
</tr>
<tr>
<td></td>
<td>Setting/Population: 21-bed acute in-patient ward for males below 65.</td>
<td></td>
<td></td>
<td>- Service users more involved in their care and ward decisions.</td>
</tr>
<tr>
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<td>- Deliberate self-harm reduced by almost two-thirds.</td>
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<td>- Violence and aggression reduced by almost one-third.</td>
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<td>- Staff sickness reduced by two-thirds.</td>
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<td>- Absconding reduced by almost half.</td>
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<td>- 95% of service users receive daily structured time with nurses.</td>
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<td></td>
<td>- No increase in suicides.</td>
</tr>
<tr>
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<td></td>
<td>Over 12 months&lt;br&gt; - £45,000 saved on staffing budget.</td>
</tr>
</tbody>
</table>

Reviewer’s comments
- Authors conclude that formal observation is an 'outmoded ritual of mental health nursing'.
- Authors maintain that the 'gift' of a nurse’s time is the most effective intervention.
- Authors argue that nurses should decide how to 'gift' their time.
- The authors acknowledge that the study is too small for the results to be generalisable and is not adequate basis for policy or practice change.
- This is not an appropriate study design for assessing therapeutic value or effectiveness.
- This was an evaluation of a change in practice, rather than a research project.
<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Lehane et al. (1996)</td>
<td>3.5-month prospective audit.</td>
<td>To examine response to incidents that would have formerly led to seclusion.</td>
<td>Forms which supplemented incident forms measured:</td>
<td>One-to-one nursing 86%.</td>
</tr>
<tr>
<td>Country: UK</td>
<td>Setting: six-bed psychiatric</td>
<td></td>
<td>• one-to-one nursing</td>
<td>Medication 58%.</td>
</tr>
<tr>
<td></td>
<td>intensive care unit.</td>
<td></td>
<td>• medication</td>
<td>Schizophrenia, drug induced psychosis and manic illness main diagnoses.</td>
</tr>
<tr>
<td></td>
<td>Population: 78 adult service users.</td>
<td></td>
<td>• both interventions.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Pilot study conducted on audit form.</td>
<td></td>
</tr>
</tbody>
</table>

**Reviewer’s comments**
- Authors acknowledge small sample size (78 service users).
- Authors note no qualitative data.
<table>
<thead>
<tr>
<th>Source</th>
<th>Study design</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Moore et al. (1995)</td>
<td>Survey.</td>
<td>• To ascertain behaviours for which constant observation is deemed appropriate.</td>
<td>• Costs.</td>
<td>• 19/26 (73%) response rate BUT only 15 hospitals (six psychiatric, nine non-psychiatric used constant observation).</td>
</tr>
<tr>
<td>Country: US</td>
<td>Setting: 26 statewide hospitals. Population: not specified. Questionnaire was piloted.</td>
<td>• To compare trends between general and psychiatric hospitals.</td>
<td>• Roles and responsibilities.</td>
<td>• 53% general; 44% psychiatric hospitals - psychiatrist decision to initiate.</td>
</tr>
<tr>
<td>Evidence level: 2-</td>
<td></td>
<td></td>
<td>• Critical behaviour.</td>
<td>• 14% psychiatric nurse decision to initiate.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Hospital demographics.</td>
<td>• All except one had policies (wide variation in formality).</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Constant observation practices.</td>
<td>• 'Sitters' - request for more training/information.</td>
</tr>
<tr>
<td></td>
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<td></td>
<td>• Lack of data on costs - only six hospitals gave detailed information - is not weighed against other costs.</td>
</tr>
</tbody>
</table>

**Reviewer’s comments**
- Does not differentiate between different interpretations of constant observation between hospitals.
- Does not specify the extent to which trusts used CO to combat violence.
- Does not discuss possible limitations of the study.
## Source

Neilsen & Brennan (2001)

### Country: UK

Evidence level: 2-

### Study design

Cross-sectional audit within a retrospective study.

Setting: high dependency psychiatric unit.

Population: 34 staff (trained and untrained), 144 adult service users' special observation (SO) records (includes elderly).

### Aims of study

To elicit staff attitudes towards and knowledge of SO policy.

To ascertain any differences across wards in terms of implementation and staff attitudes towards and knowledge of hospital observation policy.

### Outcome measures

To ascertain implementation of SO and staff knowledge of hospital policy:

- Knowledge test questionnaire was given to selected staff (both trained and untrained)
- Semi-structured interview were conducted with some staff across all four wards
- Scoring schedule for audit of 144 SORSs randomly chosen by random number table (schedule piloted and amended).

### Results

- (Four levels of SO in order of severity - red, amber, blue, green) blue most commonly imposed for three wards (56.25%). Ward C used more of a mixture.

#### Audit of SORSs

- All wards scored low on review date and authorising signature.
- Assessed risk stated on only 26.4% of SORSs.
- Assigning staff on block to SO led to missed times periods (64.5%).

#### Staff interviews

- Nursing staff felt less involved in decision-making than they would have liked (94.2% - too medically dominated) - felt SO often used 'just in case' (82.4% - blue level used too frequently).
- Impossible for staffing levels to meet current demands of SO (73.6%).
- Communication and documentation had improved since introduction of SO policy (35.29%).
- Poor medical review of SO (32.36%).
- Red level could provoke disturbed service users (29.41%).
- Gender needed greater consideration when allocating staff to SO (23.6%).

#### Knowledge test

- All staff had good knowledge of hospital policy on SO.

### Reviewer’s comments

- Authors acknowledge that lack of randomisation of staff limits generalisability.
- Amended tools not piloted or validated.
- Does not differentiate between SO used for to prevent self-harm and SO used to prevent harm to others.
- Authors conclude that the audit provides evidence that the SO is not being adhered to in practice, as intended.
<table>
<thead>
<tr>
<th>Source</th>
<th>Study design</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Penny &amp; Frost (1997)</td>
<td>Retrospective computer modelling.</td>
<td>To examine accuracy with which the need for observation could be predicted,</td>
<td>Predictive accuracy of neural network modelling.</td>
<td>Predictive accuracy of neural network modelling was low. However, it</td>
</tr>
<tr>
<td>Country: UK</td>
<td>Setting: three acute psychiatric wards (London).</td>
<td>using neural network modelling.</td>
<td></td>
<td>was better than human retrospective predictive accuracy.</td>
</tr>
<tr>
<td>Evidence level: 2-</td>
<td>Population: adult and child service users (numbers not stated).</td>
<td></td>
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</tbody>
</table>

**Reviewer's comments**
- Author argues that low predictive accuracy reflects the difficulty of isolating variables with predictive value.
- Modelling is based on what occurred in these wards - presuming this to be the ideal.
<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Philips et al. (1977a)</td>
<td>Retrospective cohort study (over 10-year period).</td>
<td>To identify:</td>
<td>• Status at time of CO.</td>
<td>• Main reason for CO = diagnosis ($p&lt;0.05$) and there was a correlation between diagnosis and age ($p&lt;0.01$) and diagnosis and sex ($p&lt;0.05$).</td>
</tr>
<tr>
<td>Country: Canada</td>
<td>Setting: state hospital</td>
<td>• types of service user who receives constant observation (CO) - numbers not stated.</td>
<td>• Status at time of admission.</td>
<td>• Largest proportion of service users on CO = schizophrenics (43%).</td>
</tr>
<tr>
<td>Evidence level: 2-</td>
<td>Population: service users who received constant observation (CO) - numbers not stated.</td>
<td>• reasons for CO.</td>
<td>• Sex.</td>
<td>• Identifies service user on CO as most likely to be female, schizophrenic [suicidal or behavioural difficulties (15-29yrs or 35-40yrs)] or depressed [suicidal (30-50yrs)].</td>
</tr>
<tr>
<td></td>
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<td>• therapeutic benefit to service user.</td>
<td>• Age.</td>
<td>• Nurses found existing system unsatisfactory - assigned to CO for entire shift - which proved extremely stressful.</td>
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<td></td>
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<td></td>
<td>• Reason for CO.</td>
<td>• Many nurses saw CO as custodial rather than therapeutic.</td>
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<td></td>
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<td>• Use of restraints.</td>
<td>• Nurses suggested that other service users acted out more when a service user on ward was on CO. One participant suggested staff acted out more.</td>
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<td></td>
<td></td>
<td></td>
<td>• Place of birth.</td>
<td>• 79% in favour of a special unit for CO; 45% staff indicated would willingly always work in this area, with 34% sometimes and 21% never.</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>• Any language difficulties.</td>
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<td>Questionnaires distributed to all staff regarding therapeutic benefit of CO and reasons when it should be used.</td>
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</table>

**Reviewer’s comments**
- Does not state percentage returns for questionnaire.
- Author notes that further research needs to be undertaken into the therapeutic value of CO.
<table>
<thead>
<tr>
<th>Source</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Philips et al. (1977b)</td>
<td>Retrospective study (over two-year period).</td>
<td>To establish whether the stress of continuous observation (CO) correlates positively with staff absenteeism.</td>
<td>Analysis by variance (baseness due to illness per month were correlated with hours spent on CO).</td>
<td>• Statistical correlation between hours spent on CO and sick leave (p&lt;0.05). Would have been higher but for discrepancies in three months each year. (CO decreased, while sick leave increased, except for one month with particularly high levels of CO, where sick leave decreased).</td>
</tr>
<tr>
<td>Country: Canada</td>
<td>Setting: state hospitals.</td>
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<tr>
<td>Evidence level: 2-</td>
<td>Population: nurses involved in CO (numbers unclear).</td>
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</tbody>
</table>

**Reviewer’s comments**
- Authors suggest that discrepancies to sick leave-CO correlation can be explained in terms of staff shortages, limiting staff available for CO, and pressure of CO obligating staff not to take sick leave.
- Authors argue that sick leave increased per capita, suggesting that stress levels high - and exacerbated by CO.
- No information is given on the number of nurses entered into the study per year. Results must be treated with caution.
<table>
<thead>
<tr>
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</thead>
</table>
| Shugar et al. (1990)   | Retrospective cohort with controls, (Control group was made up of service users entering unit immediately subsequent to each subject's admission). Setting: psychiatric teaching unit. Population: 102 adult, civil and forensic (also geriatric) with 102 control subjects. | To ascertain reason for CO and to assess the effectiveness of CO. | Incidence of CO.        | • 102 incidences of CO identified.  
• CO used for violence management:  
  • Over-stimulation - 25  
  • Violence to property - 6  
  • Potential violence to others - 5  
  • Actual violence to others – 4.  
• Service users requiring long-term observation distinguished from those requiring short-term observation by greater risk of self-harm (p<0.04), history of violence to property (p<0.05), multiple reasons for being placed on CO (p<0.04). More likely to receive ECT (p<0.03) or restraints (p<0.05).  
• Six demographic and clinical factors differentiating subjects requiring CO from those not requiring it - history of self-harm, involuntary status on admission, belonged to two lowest social classes, past history of violence to property, female, past history of violence.  
• Authors offer tentative conclusion of positive effectiveness of CO, but note that study design makes these difficult to validate, because of confounders. |

**Reviewer’s comments**  
- Authors admit that design constraints make effectiveness difficult to assess and therefore offers only tentative conclusions.  
- Authors recommend that CO is only used as a short-term measure, but offer no research evidence to back this up.  
- While this article contains some useful information, the study design is weak and the conclusions must be treated with caution.
<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Torkelson et al. (1999)</td>
<td>Six-month before and after study.</td>
<td>To examine the use of constant observation (CO) on medical-surgical units.</td>
<td>• Demographics.</td>
<td>• 84/89 hospitals agreed to participate.</td>
</tr>
<tr>
<td></td>
<td>Setting: medical surgical units statewide acute care hospitals.</td>
<td></td>
<td>• Underlying reasons for CO.</td>
<td>• Variety of reasons given. Most common: (37%) danger to themselves or others, could not be sedated or restrained (4%).</td>
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<tr>
<td></td>
<td>Population: service users considered at risk (all reasons including violence) from 84 hospitals (number of patients not reported).</td>
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<td>• Physicians, nurses and family decided to initiate CO.</td>
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<td>• Discontinued for a number of reasons, including: decisions of physician or nurses; family taking over observation (55%); required a doctor’s order to discontinue; the rest based on nurse evaluation.</td>
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<td>• Most common alternative to CO was observation by family member.</td>
</tr>
</tbody>
</table>

Reviewer’s comments
- Does not differentiate between those who were a danger to themselves and those who were a danger to others.
- No firm conclusions of the efficacy of CO.
### Yonge & Stewin (1992)

**Country:** Canada  
**Evidence level:** 2-

<table>
<thead>
<tr>
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</tr>
</thead>
</table>
| Yonge & Stewin (1992) | Qualitative. Setting: unspecified psychiatric context. Population: eight psychiatric nurses. | To examine nurses’ responses to undertaking close observation (CO). | Interviews (taped, transcribed and analysed using 'ethnograph' - programme for textual analysis). | The following themes emerged:  
- service user and nurse both on CO  
- CO alters the passage, meaning and use of time  
- CO as a dynamic rather than static relationship  
- CO enhances nurse’s sense of powerlessness  
- nurses prepare for CO in advance  
- strategies for difficult situations  
- issues around watching service user eat  
- no nurse went into bathroom with service user  
- nurses have personal preferences for certain CO service users. |

**Reviewer’s comments**
- All themes are treated as equally important - does not indicate frequency.
- Highlighted various common sense issues related to the stressful nature of CO. These results need to be treated with caution, due to small sample size.
## I Service user perspectives on observation

<table>
<thead>
<tr>
<th>Source</th>
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</tr>
</thead>
</table>
| Jones et al. (2000) | Survey       | To identify service user preferences and feelings about close and constant observation. | Repertory grid technique to measure service user’s feeling and preferences about close and constant observation. | • Out of 54 service users, 25 agreed to be interviewed, but only 18 completed the interviews.  
• Data was analysed using Flexigrid, SPSS, and t tests for paired and independent samples.  
• Service users commented that they felt safest when they were being observed either by a nurse they knew or by a nurse who talked to them. The inverse was also true. Both were magnified for service users with risk of self-harm (p=0.002).  
• Services users preferred to be observed by nurses who they knew (p<0.0002) or who talked to them (p<0.0002).  
• Suicidal service users disliked being observed by nurses they didn't know (p=0.0001) and by nurses who didn't talk to them (p=0.0001). |
Population: 54 service users who were psychiatric in-patients and experienced close or constant observation (two highest levels out of four possible). | Service users interviewed either while being observed or within five days of a period of observation ending. |                                                                                      |                                                                         |

### Reviewer’s comments
- Authors comment that the role of the observer is the most important factor in shaping service user perceptions of observation.
- Small sample size; results are not generalisable.
- Limitations of study are discussed - suitability of Flexigrid for all service users.
- Only two service users of final sample were observed for the risk of harm to others.
## 5.7 Physical interventions and seclusion

<table>
<thead>
<tr>
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</tr>
</thead>
</table>
| Brooks et al. (1994) | Descriptive study. Setting: six 28-bed acute units. | To assess effects on seclusion and restraint of service user overcrowding in psychiatric hospital units. | Levels of seclusion and restraint. Number of service users per ward. | • The mean daily number of service users on the wards and the mean number of incidents of seclusion or restraint were analysed for 12 consecutive months.  
• The mean monthly rate of incidents for the whole year (range 8-49) was in the same rank order as the average daily occupancy per month (range 20-31). |

**Reviewer’s comments**
- The authors conclude that higher density is associated with greater use of restraint and seclusion.
- Taken from RCPsych review.
### Study Design

<table>
<thead>
<tr>
<th>Source</th>
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<th>Outcome measures</th>
<th>Results</th>
</tr>
</thead>
</table>
| Craig et al. (1989) | Descriptive study | To assess patterns in seclusion and restraint. | • Changes in ward environment such as staffing patterns, training, participation of management. | • This study describes the decline in hours of restraint from 1,030 per month in 1986 to 192 in the first quarter of 1988.  
• Use of seclusion decreased from 231 to 107 hours per month.  
• The change was attributed to improved staffing patterns, education, and participation with management. |

**Reviewer’s comments**
- Taken from RCPsych review.
<table>
<thead>
<tr>
<th>Source</th>
<th>Study design</th>
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<th>Outcome measures</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Hafner et al.</td>
<td>Cohort study.</td>
<td>To compare the use of seclusion in two psychiatric intensive care units.</td>
<td>Seclusion, how and when used.</td>
<td>Few quantitative differences are recorded in the paper but there were 55% more injuries to staff in the second unit, which was subsequently provided with its own seclusion room.</td>
</tr>
</tbody>
</table>

**Reviewer’s comments**
- Taken from RCPsych review.
<table>
<thead>
<tr>
<th>Source</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Kingdom &amp; Bakewell (1988)</td>
<td>Descriptive study.</td>
<td>To assess the effect of a non-seclusion policy on management of violence.</td>
<td>Number of aggressive incidents.</td>
<td>812 service user were admitted in two years; 90 were under Section and 12 were transferred from prison because of psychotic symptoms.</td>
</tr>
<tr>
<td></td>
<td>Setting: 30-bed acute unit.</td>
<td></td>
<td>Who was assaulted.</td>
<td>There were 50 aggressive incidents - 42 against staff - the most serious being a fractured rib.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Time assault took place.</td>
<td>Staffing was below average for the region.</td>
</tr>
<tr>
<td></td>
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<td></td>
<td>Peak daily doses of medication were well within recommended limits.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Two service users had to be transferred to a medium-secure unit and one to a regional secure unit during the two years.</td>
</tr>
<tr>
<td>Reviewer’s comments</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>• Taken from RCPsych review.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Source</td>
<td>Study design</td>
<td>Aims of study</td>
<td>Outcome measures</td>
<td>Results</td>
</tr>
<tr>
<td>-----------------</td>
<td>-------------------------------</td>
<td>-------------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| Legris et al. (1999) | Retrospective cohort.         | To examine the impact of seclusion alone and in combination with other important treatment variables (medications, disease severity, psychosocial and demographic variables) that best predict treatment outcome. | • Length of hospital stay, reduced pathology on discharge, measured by Bigelow’s psychiatric symptom assessment scale (PSAS). Principle investigator accessed information via comprehensive chart review - i.e. nursing and physicians’ notes, medication records and multi-disciplinary progress tools. | • Length of follow-up eight months.  
• Mean difference in hospital stay between secluded and non-secluded=12 days.  
• \(PSAS_{change}\) = final early predictive equation for change in pathology at discharge for psychotics.  
• Stepwise multiple regression of early predictors |

**Country:** Canada  
**Evidence level:** 2-  
**Setting:** acute psychiatric. Two unlocked wards with 49 beds.  
**Population:** 170 psychiatric in-patients (85 included in study).

<table>
<thead>
<tr>
<th>Response variable</th>
<th>Explanatory variable</th>
<th>Correlation</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospital stay</td>
<td>Med. cont</td>
<td>0.3711</td>
<td>0.0022</td>
</tr>
<tr>
<td>Seclusion</td>
<td>PSAS1</td>
<td>0.6301</td>
<td>0.00001</td>
</tr>
<tr>
<td>(PSAS_{change})</td>
<td>Employment</td>
<td>-0.3125</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Marital</td>
<td>0.1118</td>
<td></td>
</tr>
</tbody>
</table>

Seclusion was not found to be associated with mental status at discharge \((P=0.118)\), although it was associated with an increase in length of hospital stay. Though it is suggested that secluded service users disliked hospital more, attitude was not a significant predictor of treatment outcome.

**Reviewer’s comments**  
- Tools piloted and inter-rater agreements assessed.  
- Statistical analysis rigorous and appropriate.  
- Study descriptive and shows association.  
- One principle investigator; no crosschecking for reliability.  
- Use of official records - completion would have varied between records.  
- Does not discuss efficacy of seclusion.
<table>
<thead>
<tr>
<th>Source</th>
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<th>Outcome measures</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Sailas &amp; Fenton (2002)</td>
<td>Systematic review</td>
<td>To estimate the effects of seclusion and restraint, compared to the alternatives, for those with serious mental illnesses.</td>
<td>Mental state.</td>
<td>2,155 citations.</td>
</tr>
<tr>
<td></td>
<td>(Cochrane).</td>
<td></td>
<td>Behaviour.</td>
<td>35 studies obtained.</td>
</tr>
<tr>
<td></td>
<td>Setting: not specified.</td>
<td></td>
<td>Adverse effects.</td>
<td>No studies met minimum inclusion criteria . no data synthesis.</td>
</tr>
<tr>
<td>Country: UK</td>
<td>Population: staff,</td>
<td></td>
<td>Medication.</td>
<td>24 excluded studies focused on the restraint of elderly confused people,</td>
</tr>
<tr>
<td></td>
<td>organisations and</td>
<td></td>
<td>Hospitalisation.</td>
<td>to prevent them from wandering or falling.</td>
</tr>
<tr>
<td></td>
<td>service users with</td>
<td></td>
<td>Satisfaction with care.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>chronic mental illness.</td>
<td></td>
<td>Economic outcomes.</td>
<td></td>
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</tbody>
</table>

**Reviewer’s comments**
- Update, yet to be published. It shows no new RCTs therefore conclusions remain unchanged.
- This review clearly state there is no evidence at this level.
- Authors conclude that no controlled studies exist that evaluate the value of seclusion or restraint in those with serious mental illness. There are reports of serious adverse effects for these techniques in qualitative reviews. Alternative ways of dealing with unwanted or harmful behaviours need to be developed. Continuing use of seclusion or restraint must therefore be questioned from within well-designed and reported randomised trials that are generalisable to routine practice.
### II Staff and service user perspectives on seclusion and physical interventions

<table>
<thead>
<tr>
<th>Source</th>
<th>Study design</th>
<th>Aims of study</th>
<th>Outcome measures</th>
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</tr>
</thead>
</table>
| Alty et al. (1997) | Descriptive with analysis of themes.  | To explore how nurses gained experience and knowledge of seclusion practice, and nursing attitudes towards the values and concerns surrounding the seclusion debate. | • Binary response on perceived usefulness of educational experience.  
• Subjective opinions about seclusion on opinion scales.  
• Additional comments written down verbatim.  
• Independent researcher analysed data thematically. | • Response rate 77%.  
• One-to-one training more useful, requirement for practical training rather than reading, nurse not involved in open debate, nurses aware of pitfalls, but seclusion regarded as necessary nurses requesting more information.  
- 28% seclusion training.  
- 34% read articles on seclusion.  
- 52% seclusion valuable; 5% should no longer be used.  
- 67% of those trained agreed seclusion was valuable, compared to 46% of those not trained.  
- 22% worked on ward with non-seclusion policy; of these, 79% disagreed that seclusion should no longer be used.  
• Themes - keeping safe, seclusion abuse, value of seclusion in real world practice, learning process, against the wall decision-making process. |
<p>| Country: UK    | Setting: one NHS trust (four wards plus two day facilities). | Population: convenience sample of nurses n=64. |                                                                                   |                                                                                                                                           |
| Evidence level: 2- |                                                                 |                                                                 |                                                                                   |                                                                                                                                           |</p>
<table>
<thead>
<tr>
<th>Source</th>
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<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Binder &amp; McCoy (1983)</td>
<td>Descriptive.</td>
<td>To study service users' attitudes toward placement in seclusion.</td>
<td>• Reports and reactions of patients and other people involved.</td>
<td>• Of the 27 service users who were secluded, 24 agreed to complete a questionnaire about their experience shortly after release from seclusion.</td>
</tr>
<tr>
<td></td>
<td>Setting: locked hospital unit.</td>
<td></td>
<td></td>
<td>Only four attributed seclusion to behaviour that the staff put forward as justifying the action.</td>
</tr>
<tr>
<td></td>
<td>Population: 27 secluded service users.</td>
<td></td>
<td></td>
<td>More generally, no service user mentioned any of the ‘official’ reasons: i.e. external controls, relief from disturbing interpersonal actions and decreased sensory input.</td>
</tr>
<tr>
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<td>All but three service users had only negative reactions to the experience, although most thought that there was no adverse effect on the rest of treatment.</td>
</tr>
</tbody>
</table>

**Reviewer’s comments**
- Taken from RCPsych review.
### Source

<table>
<thead>
<tr>
<th>Study design</th>
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<th>Outcome measures</th>
<th>Results</th>
</tr>
</thead>
</table>
| Semi-structured tape-recorded interviews. Setting: psychiatric in-patient wards, Population: six restraint incidents; one service user and two staff per incident interviewed. | To explore the factors service users and staff groups found helpful during and in the aftermath of restraint. | • Description of recent incident, any precipitants to incident, emotional state.  
• Helpful or unhelpful factors during and post incident.  
Transcripts anonymous and data analysed independently using Miles & Huberman technique. Interviews took place 24-hours post incident. | • Antecedents - disturbed wards, failed communication.  
• In conflict - fear and embarrassment.  
• Last resort - planning containment and support.  
• Aftermath - distress, service user's need for understanding and support.  
• De-briefing- fear of restraint, restraint and re-traumatisation.  
• Agency staff, ethical issues - staff re-traumatisation. |

### Country: UK

Evidence level: 2-

<table>
<thead>
<tr>
<th>Reviewer’s comments</th>
</tr>
</thead>
</table>
| • Recruitment of participating wards not known.  
• Method of data analysis not given - maybe content analysis or grounded theory therefore not rationalised in a theoretical context, process explained.  
• This was a pilot study. Incidents were limited due to time constraints, therefore this initial analysis needs to be treated with care.  
• There is no follow-up to this pilot study as yet. It is included as a useful study model, providing useful information, although on a relatively small sample, even for a qualitative study. |
<table>
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<th>Outcome measures</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eriksson &amp; Westrin (1995)</td>
<td>Cohort study.</td>
<td>To assess coercive measures in psychiatric care.</td>
<td>• Reports and reactions of patients and other people involved.</td>
<td>• Both groups and their relatives were interviewed shortly after discharge and again three-eight months later.</td>
</tr>
<tr>
<td></td>
<td>Setting: acute admissions units,</td>
<td></td>
<td></td>
<td>• Large proportions of both groups reported that they had felt under coercion, for example, involuntary admission, restraint (half of each group), locked room, pressure to take medication, attend groups or modify behaviour.</td>
</tr>
<tr>
<td></td>
<td>Population: 118 committed service users and 114 voluntary controls.</td>
<td></td>
<td></td>
<td>• Relatives tended to concur.</td>
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<td>• Service users in both groups also agreed that some coercion was necessary.</td>
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<td></td>
<td>• Staff and service users agreed on 70% of incidents of coercion, but in over half of these staff preferred the term ‘persuasion’.</td>
</tr>
</tbody>
</table>

**Reviewer’s comments**
- The authors conclude that there is a grey area between coercion and voluntary acceptance of care.
- Taken from RCPsych review.
<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Gallop et al. (1999)</td>
<td>Ethnographic (self-selected sample).</td>
<td>To explore the experience of women with a history of childhood sexual abuse who were hospitalised in psychiatric settings, restrained and given forced medication.</td>
<td>Unstructured audio taped interviews with further probe questions on opinions of restraint.</td>
<td>Interviews completed, transcribed with ethnographic software.</td>
</tr>
</tbody>
</table>

**Reviewer's comments**
- Small sample of self-selected informants, six of them related to self-harm, rather than violent disturbed behaviour.
- Study provides useful information and is consistent with other studies but is not generalisable.
- Suggests importance of history taking and need for individual care plans.
<table>
<thead>
<tr>
<th>Source</th>
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<th>Outcome measures</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hammill (1987)</td>
<td>Descriptive study.</td>
<td>To assess service user attitudes towards seclusion.</td>
<td>• Feelings about seclusion.</td>
<td>• 17/26 service users who were secluded completed a questionnaire about the experience within 72 hours of release.</td>
</tr>
<tr>
<td></td>
<td>Setting: university hospital.</td>
<td></td>
<td></td>
<td>• 15 unmatched non-secluded patients who had been in the ward at the time a seclusion took place also completed it.</td>
</tr>
<tr>
<td></td>
<td>Population: 26 secluded service users and 15 non-secluded service users.</td>
<td></td>
<td></td>
<td>• Among many variables, seven secluded patients thought no adequate explanation had been given.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Nine of the non-secluded patients thought seclusion was unnecessary or harsh.</td>
</tr>
<tr>
<td></td>
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<td></td>
<td></td>
<td>• 13 secluded and 14 non-secluded patients agreed that a seclusion room was needed in the ward.</td>
</tr>
</tbody>
</table>

Reviewer’s comments
• Taken from RCPsych review.
<table>
<thead>
<tr>
<th>Source</th>
<th>Study design</th>
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<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Holzworth &amp; Wills (1999)</td>
<td>Judgement analysis in the framework of social judgement theory. Setting: short-term psychiatric facility. Population: nine psychiatric nurses.</td>
<td>To explore frequencies of individual recommendations among nurses, agreement between recommendations and individual insights into judgement policies.</td>
<td>• Judgement booklet completed by self-selected nurses in own time.</td>
<td>• Frequency of types of recommendations:</td>
</tr>
<tr>
<td></td>
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<td></td>
<td></td>
<td>mean</td>
</tr>
<tr>
<td>Country: US</td>
<td></td>
<td></td>
<td></td>
<td>No action 12.5</td>
</tr>
<tr>
<td>Evidence level: 2-</td>
<td></td>
<td></td>
<td></td>
<td>Seclusion only 0.3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Restraint only 0.3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Observation and seclusion 13.9</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Observation and restraint 3.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Seclusion and restraint 0.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Observation, seclusion and restraint 8.2</td>
</tr>
<tr>
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<td></td>
<td></td>
<td></td>
<td>Nurses were not consistent in use of cues for particular types of recommendation.</td>
</tr>
<tr>
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<td></td>
<td></td>
<td>Nurses reluctant to recommend restraint, but more likely to recommend seclusion.</td>
</tr>
</tbody>
</table>

Reviewer’s comments
- Analysis also includes use of interventions for those that self-harm.
- Restraint refers to devices used.
- Policy promotes restriction of restrictive interventions over other alternatives.
- Implications for staff training raised.
- Study did not include other information about dynamic and setting specific factors – for example, numbers of staff, time of day etc.
### Infantino & Musingo (1985)

**Country:** US  
**Evidence level:** 2-

**Study design:** Comparative analysis.  
**Setting:** state hospital.  
**Population:** 96 unit staff and shift supervisors.

**Aims of study:** To compare assaults and injuries among staff with or without training in control techniques (ACT).  
Training course had been validated.  
Training programme involved testing competency.

**Outcome measures:** Assaults and injuries (data obtained from state workman’s compensation casualty reports).

<table>
<thead>
<tr>
<th>Category</th>
<th>Trained (31)</th>
<th>Untrained (65)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assaulted</td>
<td>1</td>
<td>24</td>
</tr>
<tr>
<td>Injured</td>
<td>0</td>
<td>19</td>
</tr>
<tr>
<td>Not injured</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Not assaulted</td>
<td>30</td>
<td>41</td>
</tr>
</tbody>
</table>

\[ \chi^2 = 12.4 \text{ df}=1 \ p< .001 \]

- The results indicate a strong association between participating in training and not being assaulted.
- Also noted positive effect on staff of training.

**Reviewer’s comments**
- Lack of random selection of staff noted and potential selection bias on results.
- Temporal sequence is post training, therefore differences in incidence rates could be attributed to differences between the two groups in selection or training.
<table>
<thead>
<tr>
<th>Source</th>
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</tr>
</thead>
</table>
| Lemonidou (2002)  | Descriptive/survey.   | To investigate the type of restriction used to suppress violent behaviour of psychiatric service users.  
                      | Setting: psychiatric in-patient wards in psychiatric and general wards.   | To explore nurses’ attitudes towards seclusion and restraint.  
                      | Population: all nursing staff (190).                                        | To determine if there is a difference in nurses’ attitudes, due to their level of education.                                         | - N=190 100% response rate.  
                      |                                                                                     | Self-administered questionnaire: attitudes to interventions used, frequency of use and effectiveness. Questions on the feelings of staff and those of service users as understood by the staff. Questionnaire piloted and validated. | - 60 male and 130 female, 85 registered nurses and 105 nursing assistants from 12 wards in five hospitals.  
                      |                                                                                     |                                                                 | - Most frequently reported restraints: restraint 42.6%, seclusion 26% and both 31.1%, 69% of nurses prefer seclusion and 52.6% believe it to be more effective than restraint (33.7%). 42.6% repeat aggressive behaviour after removal of restraints. Nurses believe service user assessment (53.7%) and frequent communication (32.6%) are the most important practices in preventing violent behaviour, with staffing as the most important environmental factor (56.3%) that influences use of restraint and seclusion. 38.9% considered nurses level of education to be important. Seclusion and restraint were used most often for service user safety and 23.2% for behaviour control. 16.8% are against the use of restraints.  
                      |                                                                                     |                                                                 | - There was no significance in the differences in nursing attitudes toward restraints due to their level of education, work experience or type of hospital. 57% of registered nurses believed education was the most important factor for avoiding service user restriction, followed by staffing. 71.6% of nursing assistants believed staffing was the most important factor and 28.4% cited education. (p<.01). |

Reviewer’s comments  
The study is focused on mechanical restraints rather than physical handling.
<table>
<thead>
<tr>
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<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marangos-Frost et al. (2000)</td>
<td>Ethnographic</td>
<td>To assess nurses’ descriptions of their thoughts and feelings, and how these influence their decision-making in situations involving the application of physical restraints.</td>
<td>Semi-structured interviews, use of Tesch’s (1990) guidelines for data organisation and interpretation</td>
<td>Restraint situation represented a decision dilemma of making a choice between risking harm to the service user or others, or restraining options - equally unwelcome.</td>
</tr>
<tr>
<td>Country: Canada</td>
<td>Setting: 30-beded unlocked psychiatric in service user unit in a community general hospital. Population: six registered nurses.</td>
<td></td>
<td>Four emergent themes:</td>
<td>- the framing of the situation: the potential for imminent harm - the unsuccessful search for alternatives to physical restraints - the conflicted nurse - the contextual conditions of the restraint.</td>
</tr>
<tr>
<td>Evidence level: 2-</td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

**Reviewer’s comments**
- Small sample of a selected group of mature experienced nurses.
- Restraint may have included or meant devices but not specified.
- Examples given in analysis focus on self-harm, rather than violence, though it is referred to in the study.
### Source: Mason (1997)

**Country**: UK  
**Evidence level**: 2+

<table>
<thead>
<tr>
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<th>Outcome measures</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethnographic.</td>
<td>To study the decision-making process in deciding whether to use seclusion or not.</td>
<td>Extended semi-structured interviews with two case vignettes.</td>
<td>Three themes emerged from subjects’ rationalisation process.</td>
</tr>
<tr>
<td>Setting: a forensic hospital.</td>
<td></td>
<td></td>
<td>Mechanistic - use of previous experience, formulating alternative decisions reasoning to dismiss to reaffirm original decision.</td>
</tr>
<tr>
<td>Population: 25 randomly selected volunteer nursing staff with the power to decide on seclusion or not.</td>
<td></td>
<td></td>
<td>Frame conflict - being under someone’s gaze, perceiving catastrophe, and needing to balance risks.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Asylum status - position of safety, being professional and needing to justify actions to the authorities.</td>
</tr>
</tbody>
</table>

**Reviewer’s comments**
- This paper provides an understanding of the individual nurse operating within the organisation.
- Subjects were randomly selected.
- Aims and purpose of study are clearly defined and consistent.

Decision to use seclusion is based on a complex interplay of cultural and organisational factors, rather than due to the presentation of symptoms by the service user.
<table>
<thead>
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</thead>
</table>
| Morrison et al. (1997) | Behavioural mapping.              | To use behavioural mapping to examine the location of incidents of disturbed behaviour that led to the use of seclusion. | • Location of incidents of disturbed behaviour resulting in seclusion on one locked ward in six-month period taken from seclusion records.  
• Types of incident leading to seclusion. | • N≈82 incidents and N≈60 of incidents on ward.  
• Incidents occurred in 10 different areas but over two-thirds in dayroom and dining room (65%).  
• 40% resulted in physical assault on staff.  
• 28% resulted in disturbed behaviour - meaning unclear. |

Country: UK  
Evidence level: 2-  

Reviewer’s comments  
• Limitations are discussed - i.e. use of floor plan didn’t include fixtures and fittings. Other data not obtained – for example, visitors to ward and daily routines, activities or meal times.  
• Use of records limited understanding of key terminology, such as disturbed behaviour.
### Study design

- **Source**: Muir-Cochrane (1996)
- **Country**: Australia
- **Evidence level**: 2-

<table>
<thead>
<tr>
<th>Study design</th>
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</tr>
</thead>
</table>
| Grounded theory.       | To investigate nurses’ perceptions of the processes associated with seclusion, and the conditions under which seclusion is implemented and processes involved. | • Use of seven in-depth interviews and reflective writings to illicit informants’ perceptions of purpose of seclusion, conditions under which seclusion is implemented and processes involved. | • Core conceptual category=controlling  
  • Satuated categories= ‘watching out for’ prior to seclusion and ‘watching over’ during seclusion. Staff seen as gatekeepers of control, ‘show of force’.  
  • Clinicians seen as identifying with the custodial aspects of the institution, and that the theoretical and therapeutic nature needs to be understood to reflect contemporary nursing practice that purports humanistic, holistic individual approaches to care.  
  • Tighter controls were established in lieu of staffing levels. |
| Setting: locked ward in-patient psychiatric. |                                                                               |                                                                                  |                                                                        |
| Population: registered nurses with at least one year’s year experience (number not stated). |                                                                               |                                                                                  |                                                                        |

### Reviewer’s comments
Nurse were being questioned about a selected group of psychiatric service users i.e. those detained under mental health legislation. Researchers’ involvement not described, referred to or taken account of in study.
<table>
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</thead>
</table>
| Sequeria et al. (2002) | Grounded theory.     | To examine the experience of physical restraint procedures reported by service users of secure mental health care. | • Semi-structured taped interviews conducted within 12 hours of restraint incident. Thematic content analysis used. | 14 of 17 invited respondents participated.  
Five major themes emerged:  
• anger - injustice, violation of values, punishment, behaviour didn’t warrant restraint, previous abuse trauma evoked, further violence  
• anxiety - panic going beyond restraint episode  
• mental upset  
• containment - female patients restrained by female staff, feeling safe, leading to seeking restraint  
• release of feelings. |

**Country: UK**  
**Evidence level: 2+**

**Reviewer’s comments**  
• Process of analysis seemed thorough.  
• Response good, although no details on non-responders.  
• Questions in interview attempt to deal with measurement bias, although it was not tested or piloted.
<table>
<thead>
<tr>
<th>Source</th>
<th>Study design</th>
<th>Aims of study</th>
<th>Outcome measures</th>
<th>Results</th>
</tr>
</thead>
</table>
| Soliday (1985)  | Descriptive study. Setting: three wards in a state hospital. Population: 146 service users (64% with diagnosis of schizophrenia) and 56 staff. | To assess service user and staff attitudes toward seclusion. | • A 24-item questionnaire about seclusion.                                                                                               | • 86/146 and 37/56 questionnaires were returned.  
• Service users who had previously been secluded had less favourable attitudes towards seclusion than service users who had not been secluded. |

**Reviewer’s comments**  
● Taken from RCPsych review.
<table>
<thead>
<tr>
<th>Source</th>
<th>Study design</th>
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<th>Outcome measures</th>
<th>Results</th>
</tr>
</thead>
</table>
Setting: a 17-bed short-stay ward.  
Population: 59 service users secluded in a five-bed secure area with lockable rooms. 13 staff. | To compare service user and staff reactions to seclusion. | • Questionnaire on feelings.                                                    | • 19/29 responded.  
• All 13 staff completed the questionnaire.  
• Service users were more likely than staff to say, for example, that non-complaint behaviour, requests to see the doctors, or a wish to sleep in the afternoon were reasons for seclusion.  
• Service users also thought that staff acted punitively at times.  
• Nevertheless, service users had more positive feelings than staff gave them credit for.  
• Nurses felt that they were doing the right thing, that seclusion was sometimes helpful and that, in the circumstances they faced, it would be impossible to cope without. |

**Reviewer’s comments**
- Taken from RCPsych review.
<table>
<thead>
<tr>
<th>Source</th>
<th>Study design</th>
<th>Aims of study</th>
<th>Outcome measures</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wise et al. (1988)</td>
<td>Descriptive study. Setting: a voluntary unlocked unit that included five quiet rooms (continuously monitored by television and visited every 15 minutes). Population: 111 service users (59 with depression and 10 with psychosis).</td>
<td>To assess attitudes of non-secluded service users toward seclusion rooms.</td>
<td>• Form on views about quiet rooms</td>
<td>• Those with no previous experience (64%) had rather more negative attitudes than those who had been secluded.</td>
</tr>
</tbody>
</table>

**Reviewer’s comments**
- Taken from RCPsych review.
II Adverse events

<table>
<thead>
<tr>
<th>Author</th>
<th>Study</th>
<th>Details</th>
<th>Comments</th>
</tr>
</thead>
</table>
| Chan et al. (1997)      | Experimental crossover controlled trial to test whether hobble or hog-tie restraint position results in clinically relevant respiratory function (positional asphyxia-compression of chest). | Intervention exercised (four minutes), rested, then oxygen saturation and arterial blood gases taken. Then put into randomised order of positions of supine, prone or restrained.  
Results: found no evidence of hypoxia in restraint position after exercise.  
Pulmonary Function testing 80% lower than predicted values still considered clinically normal, no evidence for ventilatory failure, significant hypo-ventilation or asphyxiation as a result being placed in restraint position.  
Confounders of trauma, intoxication and stress were controlled for by utilising healthy individuals therefore study was testing the position as a factor in potential outcome of positional asphyxia. | Conducted on healthy men, not generalisable to those likely to be restrained.  
Exercise surrogate for excited delirium.  
Attempts to recreate a realistic scenario, but subjects were voluntarily tied and in the real situation excited state would continue, as individual would struggle.  
Many contributing factors to outcome are noted e.g. BMI, age, underlying disease. |
Restrained for 11 days. Medication also given. No haematological predisposing factors identified.  
Case 2 59 year-old, bipolar disorder in manic cycle, massive pulmonary embolism, small thromboses in femoral veins and myocardial infarction. Died. Restrained for 38 hours. No other known predisposing factors. | No detail given on restraint method used but presumed device that particularly restrained the legs.  
Rarity of phenomenon acknowledged.  
Length of restraint particular issue and a significant factor.  
Use of mechanical restraints rare in UK, possibly in secure settings. |
| Lazarus (2001)          | Case series of adverse events - physical restraints, thromboembolism, and death in two patients. | Case 1 37 year-old male, chronic undifferentiated schizophrenia. Had become unwell and psychotic due not taking routine medication. Admitted to hospital and treated with medication, but also required restraint with leather cuffs. Restraints were left on for eight days before admission to psychiatric hospital. Patient was not allowed to ambulate at all. Died of pulmonary embolism shortly after transfer.  
Case 2 70 year-old female with bipolar disorder and hypothyroidism. Transferred to psychiatric hospital after emergency admission, restrained for agitation and impulsive behaviour with four soft point restraints. These were removed on the third day. Died on the fourth day due to pulmonary embolism due to venous stasis. | These restraints are rarely used in the UK.  
They suggest care in any treatment that immobilises patients for significant periods of time, without being properly exercised. |
Subject was given regular doses of medication – trifluoperazine, zuclopenthizol and chloropromazine. Doses were given four times a day. Subject became aggressive and was physically restrained and then suffered respiratory arrest.  
Toxicological analysis suggested that subject had a toxic level of chlorpromazine.  
It is suggested that the combination of phenothiazines and release of adrenaline caused dysrhythmia, resulting in death. | Subject made to lie on floor but details on face up or down not given.  
Toxicity and death unexpected and biological plausibility is sought in the discussion. |
| Morrison & Sadler (2001)| Case study of adverse event - death of a psychiatric patient during physical restraint. Excited delirium – a case report. | Male 25, paranoid schizophrenia of muscular build. Emergency transfer from police custody to in patient psychiatric unit. Required repeated medication to contain violent behaviour. Method of restraint is described as: patient spent most of his time pinned down on his right side, with his torso twisted so that the pelvis and anterior thighs were | Conclusions are drawn alongside other literature on sudden deaths and acute excited states. Primarily this is that these rare events are multi-factorial in cause, but key factors emerge, such as levels of medication - for example |
Violence: The Short-Term Management of Disturbed/Violent Behaviour in Psychiatric In-patient and Emergency Departments Guideline

<table>
<thead>
<tr>
<th>Country: UK</th>
<th>Evidence Level: 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>flat on the bed. Both legs and right arm were held on the bed by a nurse at each site. A fourth nurse held the left arm obliquely across the left side and a fifth nurse applied a neck hold to prevent him from biting. During controlled release, after he had finally quietened, it was noticed that he had stopped breathing. He was not successfully resuscitated.</td>
<td>phenothiazines - and restraining that restricts breathing, particularly as this will lead to more struggling and therefore greater restraint, leading to cardiac dysrhythmias resulting in death.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Case series of adverse events - asphyxial death during prone restraint revisited.</td>
<td>21 cases reviewed and analysed during 1992-96. Interviews were conducted with restrainers and witnesses. All males, 17-45 years old. Most cases were in police custody; two occurred in health facilities. Eight cases involved mental illness.; (BW=body weight).</td>
<td>These cases were primarily outside health care settings. Potential factors understood to contribute were obesity (15), neck compression (5), as well as exhaustion and possible pre-existing disease. It was found that asphyxia could not be diagnosed through autopsy alone.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Behaviour</th>
<th>Cause of behaviour</th>
<th>Cause of death</th>
<th>* Manner of death</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delusional</td>
<td>Schizophrenia</td>
<td>Excited delirium</td>
<td>Natural</td>
</tr>
<tr>
<td>Paranoid</td>
<td>Schizophrenia</td>
<td>Restraint</td>
<td>Accident</td>
</tr>
<tr>
<td>Delusions</td>
<td>Psychosis</td>
<td>Restraint asphyxia</td>
<td>Undetermined</td>
</tr>
<tr>
<td>Mental</td>
<td>Retardation</td>
<td>Positional Hypoxia</td>
<td>Natural</td>
</tr>
<tr>
<td>Psychosis</td>
<td></td>
<td>Restraint Delirium</td>
<td></td>
</tr>
<tr>
<td>Temper</td>
<td></td>
<td>Asphyxia restraint</td>
<td>Accident</td>
</tr>
<tr>
<td>Tantrum</td>
<td></td>
<td>Asphyxia Chest/neck Compression</td>
<td>Homicide</td>
</tr>
<tr>
<td>Delirium</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hogtied on Side</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BW</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BW/Cuffs</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>BW/Cuffs</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>BW/Cuffs</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Temper</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tantrum</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Delirium</td>
<td>Schizophrenia</td>
<td>Asphyxia &amp; Chest compression</td>
<td>Accident</td>
</tr>
<tr>
<td>BW</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BW/Cuffs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BW/Cuffs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BW/Cuffs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anger</td>
<td>Personality trait</td>
<td>Positional</td>
<td>Accident</td>
</tr>
<tr>
<td>Obnoxious</td>
<td></td>
<td>Asphyxia Homicide</td>
<td></td>
</tr>
<tr>
<td>Delirium</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BW</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BW/Cuffs</td>
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<td></td>
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</tr>
<tr>
<td>BW/Cuffs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Delirium</td>
<td>Psychosis</td>
<td>Asphyxia restraint</td>
<td>Accident</td>
</tr>
<tr>
<td>Marijuana</td>
<td></td>
<td>Asphyxia</td>
<td>Homicide</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Accident</td>
</tr>
</tbody>
</table>

*Diagnosis given on post mortem

<table>
<thead>
<tr>
<th>Parkes (2000)</th>
<th>Country: UK</th>
<th>Evidence level: 2-</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental design - sudden death during restraint: a study to measure the effect of restraint positions on the rate of recovery from exercise.</td>
<td>Subjects: 16 volunteer nurse subjects from a medium secure unit took part in a controlled repeated measures study. All had completed training in C&amp;R. Intervention: exercised to reach a pulse beat of 120 beats per minute then placed in seated (control) position or C&amp;R position (prone or supine). The order of positioning for all subjects was randomised. Pulse rate and oxygen saturation were measured. Results: pulse rate was significantly longer in face down restraint than face up restraint. Non-significant between control (seated) and restraint. No significant changes were noted in oxygen saturation. Conclusion: restraint position may be a factor in death during restraint, but only where other factors contribute to the overall situation.</td>
<td>On healthy subjects however was controlling for other factors to determine whether position alone impacted on risk of death This study is consistent with the one above.</td>
</tr>
<tr>
<td>Author(s)</td>
<td>Year</td>
<td>Country</td>
</tr>
<tr>
<td>-----------</td>
<td>------</td>
<td>---------</td>
</tr>
<tr>
<td>Paterson et al. (1998)</td>
<td>1998</td>
<td>UK</td>
</tr>
<tr>
<td>Paterson (2003)</td>
<td>2003</td>
<td>UK</td>
</tr>
<tr>
<td>Pollanen et al. (1998)</td>
<td>1998</td>
<td>Canada</td>
</tr>
<tr>
<td>Schmidt &amp; Snowden (1999)</td>
<td>1999</td>
<td>US</td>
</tr>
<tr>
<td>Stratton et al. (2001)</td>
<td>2001</td>
<td></td>
</tr>
</tbody>
</table>
violence: the short-term management of disturbed/violent behaviour in psychiatric in-patient and emergency departments guideline

- factors associated with sudden death of individuals requiring restraint for excited delirium.

retrospectively reviewed to identify and rank factors associated with these deaths. all were restrained in a prone position except for 19/174 of those that did not die. criteria was that the deaths were required to be witnessed by ems personnel. all were restrained with wrists and ankles bound behind their back. data was extracted from ems reports and coroner’s reports.

<table>
<thead>
<tr>
<th>factor</th>
<th>% factor present</th>
<th>% factor absent</th>
</tr>
</thead>
<tbody>
<tr>
<td>excited delirium</td>
<td>100%</td>
<td>0</td>
</tr>
<tr>
<td>hobble restraint</td>
<td>100%</td>
<td>0</td>
</tr>
<tr>
<td>prone position</td>
<td>100%</td>
<td>0</td>
</tr>
<tr>
<td>forceful struggle against restraint</td>
<td>100%</td>
<td>0</td>
</tr>
<tr>
<td>stimulant drug use (positive toxicol.)</td>
<td>78%</td>
<td>22%</td>
</tr>
<tr>
<td>autopsy evidence of chronic disease state</td>
<td>56%</td>
<td>44%</td>
</tr>
<tr>
<td>obesity (BMI &gt; 29 Kg/meters²)</td>
<td>56%</td>
<td>44%</td>
</tr>
<tr>
<td>known chronic cocaine use (by history)</td>
<td>45%</td>
<td>*</td>
</tr>
<tr>
<td>capsicum spray</td>
<td>33%</td>
<td>67%</td>
</tr>
<tr>
<td>taser device</td>
<td>28%</td>
<td>72%</td>
</tr>
<tr>
<td>primary cardiac (VF/VT) dysrhythmia (% of confirmed rhythms)</td>
<td>8%</td>
<td>92%</td>
</tr>
<tr>
<td>neck compression</td>
<td>0</td>
<td>100%</td>
</tr>
<tr>
<td>ethnic origin:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>african american</td>
<td>33%</td>
<td></td>
</tr>
<tr>
<td>hispanic</td>
<td>33%</td>
<td></td>
</tr>
<tr>
<td>caucasian</td>
<td>33%</td>
<td></td>
</tr>
</tbody>
</table>

conclusion drawn that multiple factors can be associated with sudden death while hobble restrained for excited delirium.
5.8 Rapid tranquillisation

I Systematic reviews

<table>
<thead>
<tr>
<th>Source</th>
<th>Study design</th>
<th>Aims of study</th>
<th>Outcome measures</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alemand &amp; Kahn (2001)</td>
<td>Systematic review.</td>
<td>To assess the effects of risperidone (atypical antipsychotic) on hostility and aggression (did not look at violence).</td>
<td>Not clearly stated:</td>
<td>• Seven studies were included in the meta-analysis (only five were double-blinded RCT)</td>
</tr>
<tr>
<td>Country: Netherlands</td>
<td>Inclusion criteria: controlled studies that examine hostility and/or indirect measure of aggression in service users treated with risperidone.</td>
<td></td>
<td>• hostility/aggression (measurement not specified)</td>
<td>• Does not consider rapid tranquillisation.</td>
</tr>
<tr>
<td>Evidence level: 1-</td>
<td>Search covered 1990 - June 2000 (only MEDLINE and PsychLIT).</td>
<td></td>
<td>• number of restraints/seclusion</td>
<td>• Meta-analysis showed significant difference between risperidone and classical anti-psychotics (p=0.002).</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• sedation (measurement not specified).</td>
<td>• Risperidone more effective than placebo (p=0.004).</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Doses of &gt; 2mgs of risperidone significantly increased the difference between risperidone and classical anti-psychotics.</td>
<td></td>
</tr>
</tbody>
</table>

Reviewer’s comments

- Authors note that risperidone is not available in a short-acting intramuscular preparation, only in liquid form.
- Authors write up the results in a way which favours risperidone, despite the lack of good quality controlled trial evidence. However, they note that further randomised controlled studies are needed to confirm these results.
- Conflicting data as to whether risperidone induces more sleepiness/sedation than conventional antipsychotics.
- Authors give no information on age of participant in the trials, exclusion/inclusion criteria, loss to follow-up etc.
- This meta-analysis excluded a study that examined the effects of risperidone on violence (Beck et al. 1997).
- Authors concluded that more studies are needed on different doses of risperidone.
<table>
<thead>
<tr>
<th>Source</th>
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<th>Outcome measures</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carpenter &amp; Beck (2000 - date of last substantive update)</td>
<td>Systematic review. Inclusion criteria: all RCTs which examine the use of clozapine for service user with acute psychiatric disorders (also includes those with drugs and alcohol abuse). Search covered 1966 - 2000 (last substantive update 01 Sept 2000).</td>
<td>To estimate the effects of clozapine, including cost effectiveness, when compared to other 'standard' or 'non-standard' treatments of acute psychotic illness in controlling disturbed behaviour and reducing psychotic symptoms. Data excluded if &gt;50% lost to follow-up in any group, also if randomised by day of week.</td>
<td>• Behaviour (including tranquillisation). • Sedation. • Symptoms. • Adverse events. • Hospital and service outcomes. • Satisfaction with care. • Economic outcomes. Outcomes divided into: • immediate (less or equal to 2 hours) • short-term (&gt;2 hrs - 24hrs) • medium term (&gt;24 hrs - 2 weeks).</td>
<td>• Five trials included (none compared to placebo). • No studies addressed this issue of rapid tranquillisation. • No evidence on costs was available.</td>
</tr>
</tbody>
</table>

Reviewer’s comments
- Authors note that there is no evidence either for or against the efficacy of clozapine.
- This is a thorough systematic review. The authors note that the quality of all the included trials was poor and that more research is needed to demonstrate the merits of clozapine against other anti-psychotics.
- Authors note that the incidence of rashes and seizures with clozapine would be of particular interest in further studies.
# Violence: The Short-Term Management of Disturbed/Violent Behaviour in Psychiatric In-patient and Emergency Departments Guideline

<table>
<thead>
<tr>
<th>Source</th>
<th>Study design</th>
<th>Aims of study</th>
<th>Outcome measures</th>
<th>Results</th>
</tr>
</thead>
</table>
| Cure & Carpenter (2001 - date of last substantive update) | Systematic review.         | To estimate the effects of droperidol, when compared to other treatments for controlling disturbed behaviour and reducing psychotic symptoms, for people with suspected acute psychotic illness. Data excluded if > 50% lost to follow-up in any group, also if randomised by day of week. | • Behaviour (including tranquillisation).  
• Sedation.  
• Symptoms.  
• Adverse events.  
• Hospital and service outcomes.  
• Satisfaction with care.  
• Economic outcomes.  
Outcomes divided into:  
• immediate (less or equal to 2 hours)  
• short-term (>2 hrs - 24hrs)  
• medium term (>24 hrs - 2 weeks).  |
| Country: UK                 |                            |                                                                                |                                                                                | Three studies were included; only two studies had usable data.  
There is no evidence from randomised controlled trials to support the use of droperidol in rapid tranquillisation.  
The advantages/disadvantages of droperidol compared to haloperidol are unknown. |
| Evidence level: 1+          |                            |                                                                                |                                                                                |                                                                                           |

**Reviewer’s comments**
- This is a thorough review. Authors argue that further research is needed. Authors conclude that the use of droperidol is justified in emergency situations, in terms of experience rather than well conducted RCTs. There is little evidence to back up this conclusion.
- The drug has been voluntarily withdrawn by the manufacturers, due to concerns about effects on QT intervals.
### Source

<table>
<thead>
<tr>
<th>Fenton et al. (2001 - date of last substantive update)</th>
<th>Country: UK</th>
<th>Evidence level: 1+</th>
</tr>
</thead>
</table>

#### Study design

- Systematic review.
- Inclusion criteria: RCTs which evaluate the use of zuclopenthixol acetate for the acute treatment of serious mental illness.

#### Aims of study

- To estimate the effectiveness of zuclopenthixol acetate for the serious treatment of mental illness, in comparison to other neuroleptic drugs.

#### Outcome measures

- Behaviour (including tranquillisation).
- Sedation.
- Symptoms.
- Adverse events.
- Hospital and service outcomes.
- Satisfaction with care.
- Economic outcomes.

#### Results

- Five studies were included.
- There was no data directly related to rapid tranquillisation.
- There was a lack of information on violent incidents, disturbed behaviour, compulsory treatment and hospitalisation.

### Reviewer’s comments

- Authors note that there is no evidence to support the claims made in open clinical trials that zuclopenthixol acetate has fewer side effects than standard treatment or will be administered less frequently.
- Authors note that the evidence that zuclopenthixol acetate may lead to more intense and earlier sedation is inconclusive.
- Authors note that further research is needed.
- This is a thorough review.
II Rapid tranquillisation randomised controlled trials

Abbreviations used:
BPRS (brief psychiatric ratings scale)
MBPRS (modified brief psychiatric ratings scale)
GCI (global clinical impressions scale)
CGI (clinical global impressions scale)
CGI-S (clinical global impressions severity of illness scale)
CGI-I (clinical global impression of improvement)
PANSS (positive and negative syndrome scale)
PANSS-EC (positive and negative syndrome scale excited component)
BARS (behavioural activity rating scale)
ABS (agitated behaviour scale)
OAS (overt aggression scale)
VAS (visual analogue scale)
TSRS (target symptom rating scale)
<table>
<thead>
<tr>
<th>Study</th>
<th>Population</th>
<th>Methods</th>
<th>Main intervention (s) and comparison</th>
<th>Follow-up period</th>
<th>Outcomes (primary, secondary and adverse events) effect size, p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alexander (2004) TREC Collaborating Group</td>
<td>221 patients presented over five months, 21 were excluded</td>
<td>Allocation: randomised (computer-generated tables). Blindness: clinician blinded until patient randomised. Raters blinded at 240mins. Duration: four hours with follow-up after two weeks. Setting: emergency services in psychiatric dept of 1,800-bed teaching hospital. Baseline comparability: yes.</td>
<td>Group 1 Lorazepam 4mgs (IM). Group 2 Haloperidol 10mgs (IM) plus Promethazine 25-50mgs (IM) [96/100 received 50mgs, 4/100 received 25mgs].</td>
<td>15, 30, 60, 120, 240 and two weeks (for adverse effect/outcomes and compliance with oral medication).</td>
<td>Sleep Haloperidol + promethazine was significantly more likely to induce sleep for all time periods (p&lt;0.00) 23 people in lorazepam group didn’t sleep, eight people in haloperidol + promethazine didn’t sleep. Tranquil/asleep Haloperidol + promethazine resulted in more people being asleep for all time periods except 240mins (p&lt;0.04, p&lt;0.00, p&lt;0.004, p&lt;0.03) Haloperidol + promethazine resulted in quicker onset of tranquillisation (p&lt;0.0001)/sleep (p&lt;0.0000). Four people in lorazepam group were never tranquil, one person in haloperidol + promethazine group was never tranquil. Clinical improvement (CGI) Haloperidol + promethazine showed significantly greater clinical improvement for all time periods except 240mins (p&lt;0.00, p&lt;0.00, p&lt;0.00, p&lt;0.01) Adverse reactions (Simpson and Angus extra-pyramidal side effects rating scale and Barnes akathesia scale). Additional medication for aggression/agitation No adverse reactions with haloperidol + promethazine. One person in lorazepam group with history of bronchial asthma complained or moderate worsening of respiratory difficulty, one person reported nausea and dizziness. No dystonia. Two people scored 10-18 on Simpson Angus scale at baseline, scores unchanged after intervention. Physical restraints There was no significant difference between people restrained at any time period. Needed further medical attention No significant difference in number for whom a doctor was called. Absconding One service user in Lorazepam group absconded Two-week follow-up No serious adverse outcomes were reported for either group. There was no significant different between groups in terms of oral compliance.</td>
</tr>
</tbody>
</table>

Notes on quality assessment and comments

This appears to be a well-designed study. However, unlike most other studies that consider rapid tranquillisation, and in common with the other TREC study, this study considers sleep as the primary desirable outcome. Monitoring provision during sleep was not discussed, nor was cost of nursing time for monitoring considered. There were no ECG measurements or other measurements to check toxicity at baseline or at any other points during the study.
### Study: Battaglia (1997)

**Country:** USA  
**Source of funding:** supported from a grant by Wyeth-Ayerst Research.  
**Evidence level:** 1-

#### Population
- Setting: emergency departments in five universities or general hospitals.  
- Participants: 98 psychotic, agitated and aggressive patients.  
- Inclusion criteria: exhibition of psychosis and behavioural dyscontrol, scoring at least 5 on a scale of 1-7 or 3 or more of 11 psychosis/anxiety items from BPRS.  
- Exclusion criteria: alcohol intoxication, allergic hypersensitivity, CNS depression, delirium, neuroleptic malignant syndrome, airway obstruction, severe hypo- or hyper-tension, glaucoma, benzodiazepine or neuroleptic within last 24-hours.

#### Methods
- Allocation: randomised.  
- Blindness: double blind.  
- Duration: 24-hours (98 service users over an 18-month period).  
- Setting: five sites (emergency department).  
- Baseline comparability: yes.

#### Main intervention(s) and comparisons
- **Group 1:** Lorazepam 4mgs IM.  
- **Group 2:** Haloperidol 5mgs IM.  
- **Group 3:** Lorazepam 4mgs and haloperidol 5mgs IM.

#### Follow-up period
- Hourly for 24 hours

#### Outcomes (primary, secondary and adverse events)
- **Agitated behaviour scale (ABS)**  
- **11 items of modified BPRS (MPBRS)**  
- **CGI**

All drugs gave a significant reduction in ABS and MBPRS over time. More rapid onset of action for group 3 (compared to group 2 p=0.64) as contrasted with groups 1 and group 3 (p=0.0014). Greater reduction in MBPRS at two and three hours for group 3. No difference at any time points for CGI.

Means adjusted by ANCOVA statistical text for baseline levels.

#### Time spent asleep
- Hourly assessment of whether participant was awake or could be aroused by verbal stimuli was made using an alertness scale (for minimum of 12 hours after last injection). Significantly more time spent asleep in groups 1 and 3 than in groups 2 at 3, 4, 5, 6, 7, 9, and 11 hours.

#### Number doses required for tranquillisation
- Not difference between number of incidences.  
- More ESP in group 2 (20%), than group 1 or 3.

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**Notes on quality assessment and comments**
- No objective measure of behaviour on entry into study.  
- Many comparisons performed with no adjustment to p value.  
- Considered sleep a therapeutic end-point.  
- If sleep was considered as a therapeutic end-point for rapid tranquillisation, then combined treatment or lorazepam alone was superior to haloperidol alone.
<table>
<thead>
<tr>
<th>Study</th>
<th>Population</th>
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<th>Follow-up period</th>
<th>Outcomes (primary, secondary and adverse events) effect size, p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bieniek et al. (1998)</td>
<td>20 acutely agitated newly admitted service users - at least four on OAS.</td>
<td>Allocation: randomised.</td>
<td>Group 1&lt;br&gt;Lorazepam 2mg IM.&lt;br&gt;Group 2&lt;br&gt;Haloperidol 5mg IM plus lorazepam 2mg IM.</td>
<td>30, 60, 120, 180 min after first injection.</td>
<td>Both groups significant reduction at 60 min OAS, (75%) VAS (50%), CGI (45%). No differences were noted with ANOVAS, but non-parametric tests indicated that a greater percentage improved post 60 minutes in combined group OAS, (100%) VAS (78%) whilst in group 1 OAS, (55%) VAS (27%). No difference on CGI. Sedation by visual analogue scale - no differences in time. No serious adverse events occurred.</td>
</tr>
<tr>
<td>Source of funding:</td>
<td>Duration: 24 hours.</td>
<td>Duration: 24 hours.</td>
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<tr>
<td>not stated in Broadstock.</td>
<td>Setting: psychiatric emergency services.</td>
<td>Setting: psychiatric emergency services.</td>
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</table>

Notes on quality assessment and comments
- Small sample size.
- Short follow-up
- Many comparisons performed with no adjustment to p value.
- Two service users received second injection in group 1 but not excluded, which disadvantaged group 2.
<table>
<thead>
<tr>
<th>Study</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Binder &amp; McNeil (1999)</td>
<td>24 acutely agitated service users consecutively admitted, mostly schizophrenia.</td>
<td>Allocation: randomised. Blindness: double-blind. Duration: six days. Setting: psychiatric treatment unit. Baseline comparability: yes.</td>
<td>Group 1 Haloperidol 5mg IM (24 hours followed by oral phase). Group 2 Molindone 25 mg IM (24 hours followed by oral phase). (Oral medication not specified in Broadstock). Sample size for each group Group 1: not stated in Broadstock. Group 2: not stated in Broadstock.</td>
<td>Five days after rapid tranquillisation stage.</td>
<td>Target symptom rating scale (TSRS). General improvements were significant in both groups. However, improvements on the TSRS were greater in group 1 after three hours. <strong>Adverse reactions</strong> Sedative effects equal for each group. Erythema at injection site more common in group 1. No difference between number of service users with side-effects, although side-effects appeared to be greater in group 1.</td>
</tr>
</tbody>
</table>

**Notes on quality assessment and comments**
- Small sample.
- No objective measures of behaviour on entry to study.
- Target behaviours were not limited to service users requiring rapid tranquillisation.
- Many comparisons performed with no adjustment to p value.
- Side-effects may be due to oral phase of treatment.
<table>
<thead>
<tr>
<th>Study</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Brier (2002)</td>
<td>Recently hospitalised service users with schizophrenia, schizophreniaiform disorder or schizoaffective disorder (DSM-IV) and 14 or more on at least one item.</td>
<td>Allocation: random. Blindness: double-blind. Duration: 24-hours. Setting: four sites. Baseline comparability: yes. Exclusions: medical disorders, substance dependency.</td>
<td>Group 1: Olanzapine 2.5mg IM per injection. Group 2: 5mg IM per injection. Group 3: 7.5mg IM per injection. Group 4: 10mg IM per injection. Group 5: Haloperidol (7.5 mg per injection).</td>
<td>24 hours (assessed at 30, 60, 90 minutes and 2, 4, 6, 12 and 24 hours after first injection).</td>
<td>PANSS -EC (14 or higher) (reduction of 40%). ABS. Agitation calmness evaluation scale. BPRS total and BPRS positive scales all IM olanzapine groups showed greater improvement that placebo at 24 hours, except group 1 on BPRS positive (p=0.7). CGI-S at 24 hours group 2 (p=0.03) and 3 9 (p=0.003) showed greater improvement than placebo. Group 5 was different from placebo at 24 hours on BPRS positive (p=0.02), ABS (p=0.05) At 24 hours, groups 3(p=0.02) and 4 (p=0.03) showed greater improvement than group 5. Two service users lost to follow-up in group2 (lack of efficacy/clinical decision). All olanzapine doses and haloperidol 7.5mg were superior to placebo. However, groups 1 and 5 did not show improved over placebo until 60 minutes. No difference in benzodiazepines between olanzapine and haloperidol groups. Greater use in placebo.</td>
</tr>
<tr>
<td></td>
<td>Country: 14 sites in four countries - Croatia, Italy, Romania and South Africa</td>
<td>Source of funding: Eli Lilly. Evidence level: 1+</td>
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<tr>
<td></td>
<td>Exclusions: medical disorders, substance dependency.</td>
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**Notes on quality assessment and comments**

- Participants had to provide consent - suggests that they were not acutely agitated.
- Author notes that study was designed to have power to detect differences between drugs and placebo, but not different drugs.
- Author notes not sufficient participants to account for all variants across sites.
- Initial doses so effective that repeat doses rarely given, so no evidence base can be given on repeat dosing.
- Benzodiazepine use may confound efficacy.
- Medical history not collected.
- No structured diagnostic interviews.
- Olanzapine appears to have rapid onset of action with groups 2, 3 and 4 on PANSS-EC by 30 minutes.
- No acute dystonia was reported with olanzapine.
- Author claims that olanzapine has a safer profile than haloperidol.
- Dose related responses for IM olanzapine (p<0.001) across the range 2.5-10mgs as measured by a reduction in PANSS-EC two hours after first injection.
**Study** | **Population** | **Methods** | **Main intervention (s) and comparisons** | **Follow-up period** | **Outcomes (primary, secondary and adverse events)** | **Effect size, p-value**
---|---|---|---|---|---|---
Brooks et al. (2000) | Service users with acute psychosis related to schizophrenia, schizoaffective disorder, bipolar disorder, brief psychotic disorder, or psychotic disorders not otherwise specified in the DSM-III-R. Excluded - substance abuse, or organic dysfunction, clinically relevant medical illness, abnormal ECG, risk of immanent suicide or homicide, breastfeeding women and women able to conceive. | Allocation: randomised 2:1 ratio. Blindness: not specified. Duration: seven days. Setting: in-patient, 19 centres. Baseline comparability: yes. | Group 1 Ziprasidone - 10mgs IM (max 80mgs and four injections in 24 hours). Group 2 Haloperidol 2.5-10mgs IM (max 40mgs and four injections in 24 hours). Service users moved to oral medication after three days (ziprasidone 80mgs or twice last daily dose - whichever was higher; haloperidol dose 10mgs or last daily dose - whichever was higher). Sample size for each group Group 1 - 90 Group 2 - 42. Oral medication form not specified. | No follow-up beyond seven days (up to three days of IM treatment followed by oral treatment twice daily until day seven). | **Aggression** Mean reduction significantly greater for ziprasidone IM than haloperidol IM for BPRS total, BPRS agitation items, CGI-S scores (mean CGI-S scores, during treatment p=0.47, endpoint p=0.54). **Sedation** Somnolence (one in group 1). **Loss to follow-up** Lower drop out from ziprasidone group (8/90 vs. 8/42) - reasons for drop out given. **Adverse reactions** Barnes akathesia scale and Simpson -Angus scale used. Mostly mild and tolerable. **Group 1** (left study) - postural hypotension (1) akathisia (1) laryngospasm (1) (didn't leave study) vomiting (3 IM phase - six oral phase), tachycardia (2) abnormal QTc values 10/74 (IM phase), 17/89 (entire study). **Group 2** (left study) excessive sweating and dry mouth - oral phase (1) (didn't leave study) ESP, abnormal QTc values 4/30 (IM phase), 8/39 (entire study). **Other drugs taken** Anxiolytics were taken by 52/90 and 27/42. Hypnotics for night-time sedation - 9/90 and 3/42.

**Notes on quality assessment and comments**
- Does not really address rapid tranquillisation but the management of acute features of psychosis.
- Transition from IM ziprasidone to oral ziprasidone well tolerated.
- Ziprasidone IM was significantly more effective in reducing symptoms of active psychosis and was better tolerated than haloperidol IM.
<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Daniel et al. (2001)</td>
<td>In-patients 18years + acute agitation associated with schizophrenia, schizoaffective disorder, bipolar disorder or other psychotic disorder (DSM-IV). Had to score at least 3 on three out of four PANSS items (G2, G4, P7 &amp; P4). Excluded: if substance abuse (DSM-IV) two months prior (cannabis and benzodiazepine traces admitted at researcher's discretion), history of alcohol abuse, risk of suicide/homicide, abnormal ECG, clinically relevant medical condition, received clozapine 12 weeks prior, women without reliable contraception, or pregnant women.</td>
<td>Allocation: randomised. Blindness: double-blind. Duration: 24 hours. Setting: 20 centres across USA. Baseline comparability: yes.</td>
<td>Group 1 Ziprasidone 2 mg IM. Group 2 Ziprasidone 20mg IM. Sample size for each group Group 1 - 38 Group 2 – 41. Numbers needed to treat 3 (3.111).</td>
<td>Study end-point was 24 hours or six hours after last dose - whichever was later. BARS was rated at 15, 30, 45, 60, 90, 120 minutes after each dose and hourly until next dose. CGI-I rated screening, baseline, four hours after each injection and at end-point. PANSS screening, baseline, four hours after each injection and at end-point.</td>
<td>Aggression: Mean BARS score decreased after 15 minutes in group 2 and was significantly lower than group 1 at 30 minutes. (p&lt;0.01) Improvement increase until two hours and was maintained for at least four hours (p&lt;0.001). A significant difference in favour of the 20mg dose was also noted on the CGI-S at four hours (p=0.008) and at end-point (p=0.004). Loss to follow-up: None stated. Somnolence: Group 1 (5), group 2 (8). Adverse reactions: Barnes akathisia scale and Simpson -Angus scale used. (Mean increase QTc values in 2mg group 3.6ms Means decrease in 20mg group - 1.3ms). Group 1: asthenia (2), dizziness (1) insomnia (2), injection site pain (1), diarrhoea (2), nausea (3). Group 2: headache (2), dizziness (4), injection site pain (3), nausea (5). Other drugs taken: Benztropine - three in each group.</td>
</tr>
</tbody>
</table>

Notes on quality assessment and comments
- All gave their consent to participate - suggests that they were not acutely ill. No service user was rated as violent (BARS 7) at any time during the study.
- Method of randomisation is not specified.
- A previous study (Reeves et al. 1998) found 10mgs IM more effective than 2mgs.
- This study excluded very hostile, confused or disorganised service users.
### Study: Dorevitch (1999)

**Country:** Israel  
**Source of funding:** not stated.  
**Evidence level:** 1-

#### Population

- Presence of active psychosis, disruptive or aggressive behaviour, pronounced psychomotor agitation, or violent outburst and hospitalisation in an acute ward.
- Exclusions: not mentioned.

#### Methods

- **Allocation:** randomised.
- **Blindness:** double-blind.
- **Duration:** 120 minutes.
- **Setting:** acute ward.
- **Baseline comparability:** only age and gender stated.

#### Main intervention (s) and comparisons

<table>
<thead>
<tr>
<th>Group 1</th>
<th>Group 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Haloperidol 5mg IM.</td>
<td>Flunitrazepam 1 mg IM.</td>
</tr>
</tbody>
</table>

#### Follow-up period

- 15, 30, 45, 60, 90, 120.

#### Outcomes (primary, secondary and adverse events)

- **Overt aggression scale (OAS) = 50% reduction at 90 minutes post administration - both groups significant (group 1 =95%), group 2 = 80%) p<0.001.**
- Effect of haloperidol lasted at least 120 minutes post administration. Effect of flunitrazepam worn off at 60 minutes. No significant difference in anti-aggressive response at 90 minutes. Group 2 reached maximum aggressive effect quicker (<30min).
- Overall response rate (defined as a reduction of a least 50% in overt aggression scale score at 90 minutes for both drugs - p<0.001).  
- **Adverse reactions**
  - No ESP in either group. Three in each group had marked sedation.

#### Notes on quality assessment and comments

- Small sample size.
- Short follow-up.
- No objective measure of behaviour on entry into study.
- Concluded that flunitrazepam is convenient, rapid and safe.
<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Dubin &amp; Weiss (1986)</td>
<td>58 acutely disturbed psychotic service users with a score of 6 in three or more items on the BPRS. Excluded: drug hypersensitivity, pregnancy or lactating mother, haematologic, cardiovascular, renal, hepatic impairment, convulsive disorder, urinary retention, glaucoma, mental retardation, received antipsychotic, hypnosedative or anti-anxiety drugs in past 24 hours. Also excluded if no informed consent.</td>
<td>Allocation: randomised. Blindness: double-blind but administration not blinded. Duration: six days. Setting: psychiatric emergency service. Baseline comparability: yes.</td>
<td>Group 1 Thiothixene 10mgs IM for 24 hours followed by oral phase for five days. Group 2 Loxapine 25mg IM for 24 hours followed by oral phase for five days. (Oral concentrate form). Sample size for each group Group 1 - 31 Group 2 – 31. Numbers needed to treat 4 (4.53).</td>
<td>24 hours IM five days oral.</td>
<td>CGI BPRS End-point (mild score on three items of BPRS initially recorded as at least 'severe') 62% after first injection in group 2; 14% in group 1. After 90 minutes, 79% in group 2; 50% in group 1. Time to reach therapeutic end-point was significantly less in the loxapine groups (p&lt;0.001) - 65minutes vs. 95 minutes). No significant difference between the two groups in the oral phase of the study. Adverse reactions Minimal side effects during IM phase. Dystonic reactions (two in group 1 and one in group 2); unduly sedated (two in group 1). Number of adverse reactions did not differ between groups.</td>
</tr>
</tbody>
</table>

Notes on quality assessment and comments
- Administration not blinded.
- Not clear all service users needed rapid tranquillisation.
- Authors note that differences in methodology preclude any meaningful comparison with other RT studies.
Foster et al. (1997)
Country: US
Source of funding: part supported by a grant from the National Alliance for Research on Schizophrenia and Depression.
Evidence level: 1-

<table>
<thead>
<tr>
<th>Study</th>
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<th>Outcomes (primary, secondary and adverse events) effect size, p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foster et al. (1997)</td>
<td>37 service users with psychotic symptoms.</td>
<td>Allocation: not stated. Blindness: double-blind. Duration: every 30 minutes for four hours (until participant sedated or no longer a danger to themselves or others). Setting: emergency department. Baseline comparability: yes.</td>
<td>Group 1 Haloperidol 5mgs IM or oral concentrate. Group 2 Lorazepam 2 mg IM or oral concentrate. BPRS GCI Sample size for each group Group 1 - 20 Group 2 – 17.</td>
<td>Four hours.</td>
<td>Aggression reduction (better GCI scores at one, two and three hours in group 2). Both groups has significant decrease in BPRS scores (p&lt;0.001) and GCI scores (p&lt;0.001). No significant difference between oral and IM routes. Adverse reactions (none recorded) Sedation/sleep (two service users group 1, three service users group 2). Physiological measures (BP etc.).</td>
</tr>
</tbody>
</table>

Notes on quality assessment and comments
- Clinical characteristics not well balanced in two groups (groups differences for diagnosis significant (p<0.05), more bipolar service users received lorazepam and more psychotic service users received haloperidol by chance.
- Intoxicants weren’t tested for.
- Doesn’t state if allocation is sufficiently concealed.
- Small study.
- Very short time period.
- Authors conclude that Lorazepam may be safer, but this needs to be treated as tentative, at best.
<table>
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<tr>
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<tbody>
<tr>
<td>Fruensgaard et al. (1977)</td>
<td>Service users with acute psychosis characterised by agitation, excitement, aggressiveness, hostility, delusions and hallucinations. Excluded: pregnancy, manic-depressive illness, ECT in preceding eight weeks, organic brain syndrome with marked dementia, convulsive disorders, alcoholism or drug dependence, serious impairment of renal, hepatic, cardiovascular or metabolic functions, and present or former increase intra-ocular pressure within 12 hours preceding admission.</td>
<td>Allocation: randomised. Blindness: double. Duration: three days. Setting: multi-site. Baseline comparability: yes.</td>
<td>Group 1 Loxapine 50 mgs IM (max 150mgs injections in 24 hours). Group 2 Haloperidol 5mgs IM (max 15 mgs injections in 24 hours).</td>
<td>No follow-up beyond three days reported in this study (up to three days of IM treatment, followed by oral treatment up to four treatment).</td>
<td>Aggression No significant differences in effect of two drugs on BPRS or CGI. Sedation More pronounced in loxapine group p&lt;0.025 (two hours hrs after first injection p&lt;0.05). After loxapine, there was a higher sleeping period regardless of injection time, diagnosis or hospital (p&lt;0.01). Adverse reactions (evaluated at least daily or as necessary) 7/15 in group 2 and 1/15 in group 1 experienced EPS. (Acute dystonia was recorded in two of these cases in group 2). Anticholingeric 5/15 group 1 and 3/15 group 2. Drowsiness/fatigue (where seen as problem by service user) 4/15 group 1 and 3/15 group 2. Dizziness 6/15 group 1 and 1/15 group 2. Palpitations 1/15 group 1. Injection site pain lasting for less than one hour 3/15 group 1 and 2/15 group 2 (a moderate reaction of the tissue could be noted). Decreased pulse rate and systolic and diastolic BP during treatment – tendency in both groups. No subjective symptoms were noted. Systolic BP didn’t fall below 100mmHg for any service user. Other drugs taken Biperiden 1ml. Sample size for each group Group 1 - 15 Group 2 - 15.</td>
</tr>
</tbody>
</table>

Notes on quality assessment and comments
- The numbers in each group are equal, which suggests that this trial is not properly randomised. Method of randomisation is not specified.
- The study has a small sample size, which makes comparisons between the two drugs difficult.
- The authors stress that further trials that compare loxapine and haloperidol are necessary.
<table>
<thead>
<tr>
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<tr>
<td>Garza-Trevino et al. (1989)</td>
<td>68 service users (study 1); 53 service users (study 2) judged to require immediate treatment for acute agitation - scoring between 50 and 100 on a VAS. Exclusion criteria: no service user had received a dose of centrally acting depressant at least two hours before baseline.</td>
<td>Allocation: randomised. Blindness: open. Duration: not mentioned. Setting: general psychiatric hospital. Baseline comparability: yes.</td>
<td>Study 1 Group 1 Lorazepam 4mg IM. Group 2 Haloperidol 5mg IM. Group 3 Both of the above.</td>
<td>30, 60, &gt;60 minutes (usually within 3.5 minutes after first administration).</td>
<td>Study 1 Combination treatment was more likely to lead to tranquillisation than either of the single drugs within 30 minutes 18/24 =75% vs. 16/44 =36% Chi-squared. Finding replicated in ANOVAS. Adverse reactions Not reported. Study 2 Three participants in group 1 and one in group 2 failed to reach tranquillisation after third dose. Adverse reactions Not reported.</td>
<td></td>
</tr>
<tr>
<td>Country: USA</td>
<td>Source of funding: not stated. Evidence level: 1-</td>
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</tr>
<tr>
<td>Group 1</td>
<td>Lorazepam 4mg IM. Group 2 Haloperidol 5mg IM. Group 3 Both of the above.</td>
<td>Sample size for each group Group 1 (not stated by Broadstock) Group 2 (not stated by Broadstock) Group 3 (not stated by Broadstock).</td>
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<tr>
<td>Group 2</td>
<td>Thiothixene 5mg (IM) and lorazepam 4mg IM.</td>
<td>Sample size for each group Group 1 (not stated) Group 2 (not stated).</td>
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Notes on quality assessment and comments
- In study 1, more women were in the haloperidol only group than the combined group.
- Very short follow-up period for both studies.
- Side-effects not described for both studies.
- Neither study was double-blind.
<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Huf (Trec Collaboration) (2003)</td>
<td>People needing acute intramuscular sedation because agitation or dangerous behaviour where the clinician was uncertain of treatment required. Excluded: if clinician believed treatment presented additional risk to service user. Evidence level: 1++</td>
<td>Allocation: randomised. Blindness: service user blind. Duration: 24 hours (over six months). Setting: three public psychiatric emergency rooms. Baseline comparability: yes.</td>
<td>Group 1 Midazolam (doses at clinician’s discretion) 124 received 15mgs, 26 received 7.5mgs. Group 2 Haloperidol-promethazine (doses at clinician’s discretion) 77 -5mgs haloperidol, 71 10mgs haloperidol, 147 – 50 mgs promethazine, 1 – 25mgs promethazine. Sample size for each group Group 1 - 150 (one refused treatment) Group 2 - 148 (one refused treatment and one ran away).</td>
<td>24 hours (and whether discharged by two weeks). Not stated if measures used or purely based on clinician’s judgement (appears to be the latter). Assessed at 20, 40, 60 and 120 minutes.</td>
<td>Tranquil or asleep 134/151 in group 1 were tranquil or asleep after 20 minutes, compared to 101/150 in group 2 (95% CI 1.16 to 1.49) (93 compared to 43 service users were asleep at this point). At 40 minutes, group 1 was still statistically and clinically significant (13% relative advantage) (1.13 (1.01 to 1.26)). Difference remained clinically at statistically significant for up to two hour after injection. Somnolence More service users were asleep throughout the trial in group 1: 20 minutes (99% CI 2.15 (1.48 to 3.11), 40 minutes (99% CI 1.70 (1.32 to 2.19), 50 minutes (99% CI 1.44 (1.16 to 1.78), 120 minutes (99% CI 1.31(1.08 to 1.57). Use of restraints No difference between groups used for 73 people. Another episode of agitation or aggression 74 people had another episode not statistical difference between groups (6% more in group 1). Further visit from doctor in 24 hours None mentioned. Overall antipsychotic load in 24 hours Being given a benzodiazepine did not appear to affect overall antipsychotic load. Not discharged by two weeks 48% discharged in group 1, 46% discharged in group 2 (RR 1.05 (0.77 to 1.44). Loss to follow-up Three service users lost – reasons not specified. Somnolence (not evaluated at two hour evaluation point) Significant adverse reactions Group 1 – 1 transient respiratory depression (man with alcohol induced, possibly also cocaine induced aggression) given 15mgs midazolam. Recovered with flumazenil 0.25mgs IV. Group 2 – 1 grande mal seizure (woman had epilepsy), given haloperidol (5mgs) and promethazine (50mgs) Given benzodiazepines and recovered. Other drugs taken Flumazenil was available to counter midazolam toxicity.</td>
</tr>
</tbody>
</table>

Notes on quality assessment and comments
- Large-scale trial of reasonable quality. Authors calculated that 300 service users were required to validate the results.
- Allocation concealment prior to group allocation achieved using computer generated random sequence sent out in cardboard sealed packs.
- Others note that lorazepam (the rapidly acting benzodiazepine most commonly used in the UK) is not stable at high temperatures and therefore unsuitable in extremely hot weather.
- The outcomes were checked for 10% of service users by clinicians blinded to service user treatment.
<table>
<thead>
<tr>
<th>Study</th>
<th>Population</th>
<th>Methods</th>
<th>Main intervention(s) and comparisons</th>
<th>Follow-up period</th>
<th>Outcomes (primary, secondary and adverse events)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lesem et al.  (2001)</td>
<td>18 years + schizophrenia, schizoaffective disorder, bipolar disorder with psychotic features, delusional disorder, or non specified psychotic disorder (DMS-IV). Excluded for DSM-IV defined substance abuse two months prior (cannabis and benzodiazepine traces admitted at researcher's discretion), history of alcohol abuse, risk of suicide/homicide, abnormal ECG, clinically relevant medical condition, received clozapine 12 weeks prior, women without reliable contraception, or pregnant women.</td>
<td>Allocation: randomised (method not specified). Blindness: double-blind. Duration: 24 hours. Setting: 17 centres. Baseline comparability: not stated.</td>
<td>Group 1 Ziprasidone 2 mg IM (up to three additional doses three hrs apart, maximum four doses in 24 hours). Group 2 Ziprasidone 10 mg IM (up to three additional doses three hours apart, maximum four doses in 24 hours). Sample size for each group Group 1 - 54 Group 2 – 63. Numbers needed to treat 5(5.627).</td>
<td>24 hours.</td>
<td>Aggression Mean BARS score decreased after 15 minutes in group 2 (p&lt;0.05). Improvement increase until two hours after first dose and was significantly lower at all time points except 30 and 45 minutes (p&lt;0.05) CGI-S at four hours (3.02 in group 1 and 2.78 in group 2) and at end-point (p&lt;0.004). Loss to follow-up Two from each group. Group 1 both unrelated to treatment. Group 2 diarrhoea, akathisia, nausea (1), disruptive behaviour and agitation (1). Somnolence Group 1 (5), group 2 (8). Adverse reactions Barnes akathisia scale and Simpson - Angus scale used. (Mean increase QTc values in 2mg group 3.6ms Means decrease in 20mg group - 1.3ms). No clinically relevant ECG changes detected. Group 1 (3) headache (3), injection site pain (13%) total number of service users who reported adverse reactions (19). Group 2 headache (8), dizziness (4), injection site pain (7.9%) total number of service users who reported adverse reactions (27). Other drugs taken Lorazepam group 1 (7), group 2 (6). Temazeepam for insomnia (3) in each group. Benzotropine group 1 (8), group 2 (6). Both benzotropine and the lorazepam are reduced from baseline.</td>
</tr>
</tbody>
</table>

Notes on quality assessment and comments
- All participants gave written consent, therefore not very agitated
- This trial attempts to parallel the trial by Daniel et al. (2001). It gives more detail in the reporting.
- Authors conclude that 10mgs IM ziprasidone is rapid acting and well tolerated in the short-term management of agitated service users
- This study should be compared with Reeves (199*), which was of identical design but with 2mgs and 20mgs of ziprasidone in the two treatment groups. Authors conclude that 10mgs is a therapeutic dose and that 20mgs is more appropriate for highly agitated service users.
<table>
<thead>
<tr>
<th>Study</th>
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<th>Follow-up period</th>
<th>Outcomes (primary, secondary and adverse events)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paprocki &amp; Versiani</td>
<td>35 female service users with psychotic symptoms characterised by agitation,</td>
<td>Allocation: randomised.</td>
<td>Group 1  Haloperidol 5mgs IM or oral concentrate for four days (in 1ml ampules) at six-12 hour intervals (or until symptoms diminished) then oral equivalent for three days and then 2.5mgs doses for four weeks (adjusted to suit service user response).</td>
<td>Four weeks.</td>
<td>Loss to follow-up  25 service users had sufficient response to enter oral phase (group 1 - 14, group 2 - 11) 22 reached end of four weeks. All drop-outs were for inadequate response (except one in haloperidol for toxicity).</td>
</tr>
<tr>
<td>(1977)</td>
<td>excitement, aggressiveness, hostility, delusions and hallucinations.</td>
<td>Blindness: double. Duration: every 30 minutes for four hours (until participant sedated or no longer a danger to themselves or others).</td>
<td>Group 2  Loxapine 50 mg IM or oral concentrate for four days (in 1ml ampules) at six-12 hour intervals (or until symptoms diminished) then oral equivalent for three days and then 25mgs doses for four weeks (adjusted to suit service user response).</td>
<td></td>
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<tr>
<td>Country: Brazil</td>
<td>Excluded: known hypersensitivity dibenzazepine compounds; ECT, insulin coma,</td>
<td>Setting: fourth ward of state hospital.</td>
<td>The initial IM dose was either 0.5 or 1ml (no more than 3ml in 24 hours). Oral phase maximum dose was either 150mg loxapine or 15mg haloperidol.</td>
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<tr>
<td>Source of funding:</td>
<td>or subcoma therapy within previous eight weeks, organic brain syndrome with</td>
<td>Baseline comparability: yes.</td>
<td>Laboratory tests of haematology, blood chemistry and urinalysis at baseline, during parenteral phase and at end of oral phase.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>supported by a grant</td>
<td>marked dementia or inability to communicate during interview, history of</td>
<td></td>
<td>Sample size for each group</td>
<td></td>
<td></td>
</tr>
<tr>
<td>from Lederies</td>
<td>convulsive disorders, alcoholism or drug dependence as a significant feature</td>
<td></td>
<td>Group 1 - 18 - 14 in oral phase</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Laboratories, a division of American</td>
<td>of clinical history, serious impairment of renal or hepatic function,</td>
<td></td>
<td>Group 2 - 17 - 11 in oral phase.</td>
<td></td>
<td></td>
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<tr>
<td>Cyanamid Company.</td>
<td>increased intra-ocular pressure or history of narrow angle glaucoma or</td>
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<tr>
<td>Evidence level: 1-</td>
<td>urinary retention, cardiovascular or metabolic disorder, pregnancy suspected</td>
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<tr>
<td></td>
<td>or confirmed (urine test).</td>
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</table>

Notes on quality assessment and comments
- Clinical characteristics were well balanced in two groups
- Small study
- Authors note the need to take possible hypertension into account when using IM neuroleptics.
- Authors conclude that loxapine is superior to haloperidol in controlling agitation/excitement and aggressiveness as assessed under the conditions of this trial. However, this difference was only noted over a period of five days, and was not significant in the first 24 hours, and is therefore not relevant to rapid tranquillisation.
<table>
<thead>
<tr>
<th>Study</th>
<th>Population</th>
<th>Methods</th>
<th>Main intervention (s) and comparisons</th>
<th>Follow-up period</th>
<th>Outcomes (primary, secondary and adverse events)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reschke (1974)</td>
<td>48 female and two male psychiatric emergencies. Excluded: pregnant women, acute or chronic brain syndrome, acute alcoholic intoxication, epilepsy, psychoneurosis, drug addiction, epilepsy, psychoneurosis, personality disorder.</td>
<td>Allocation: randomised. Blindness: double-blind. Duration: 24 hours. Setting: ward. Baseline comparability: groups 4 and 5 each contained one male service user.</td>
<td>Group 1: Haloperidol 5 mg IM. Group 2: Haloperidol 2mg IM. Group 3: Haloperidol 1MG IM. Group 4: Chlorpromazine 25 mgs IM. Group 5: Placebo.</td>
<td>24 hours or six hours after last dose - whichever was later.</td>
<td>Aggression Symptoms adequately controlled in significantly more service users in groups 1 and 2 (p&lt;0.05). In group 1, 2.8 injections were required for adequate control and in group 2, 3.7 injections were required for adequate control.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>BP, pulse, respiration at baseline after each injection at each target symptom. Laboratory data blood, liver and urine profiles, chest X-ray and ECG at baseline and end of study. Sample size for each group Group 1 - 10 Group 2 - 11 Group 3 - 8 Group 4 - 10 Group 5 – 11.</td>
<td>Five-point target symptoms rating scale (0=absent, 4=very severe) at baseline at every 30 minutes for two hours after first injection. BPRS at baseline and immediately after first injection. Global therapeutic effect (at IM and oral stages).</td>
<td></td>
</tr>
</tbody>
</table>

**Aggression** Symptoms adequately controlled in significantly more service users in groups 1 and 2 (p<0.05). In group 1, 2.8 injections were required for adequate control and in group 2, 3.7 injections were required for adequate control.

**Loss to follow-up** One in group 1 due to transient hypotensive episode. Six in group 5 transferred to oral medication.

**Somnolence (not evaluated at two hour evaluation point)** One in group 2. Five in group 4.

**Adverse reactions** Transient hypertension - haloperidol three, chlorpromazine one, placebo 0. Drowsiness – awake - haloperidol 12, chlorpromazine one, placebo 0. Drowsiness – asleep - haloperidol one, chlorpromazine six, placebo 0. Dry mouth - haloperidol four, chlorpromazine one, placebo 0. Mild EPS - - haloperidol six, chlorpromazine one, placebo 0.

**Other drugs taken** Trihexyphenidyl HCl 2mg for EPS.

Notes on quality assessment and comments
- Sample size was small.
- Subsequent treatment with oral haloperidol vs. oral chlorpromazine favoured haloperidol, but results are not reported in sufficient detail. Chlorpromazine is not recommended for rapid tranquillisation as it is hazardous in the doses required for this procedure.
<table>
<thead>
<tr>
<th>Study</th>
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<th>Methods</th>
<th>Main intervention(s) and comparisons</th>
<th>Follow-up period</th>
<th>Outcomes (primary, secondary and adverse events) effect size, p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuason (1986)</td>
<td>Service users with schizophrenia, scoring at least 8 on the hostility and unco-operativeness items of BPRS. Exclusions: metabolic retardation, organic brain syndrome, obvious senility.</td>
<td>Allocation: randomised. Blindness: modified double-blind (drug administration not blinded) but evaluation of effects remained blinded. Duration: 24-72 hours. Setting: psychiatric ED. Baseline comparability: seems to be comparable, but some errors in table make this unclear. Participants signed informed consent as soon as possible. BPRS and CGI scales used.</td>
<td>Group 1 Loxapine 25mgs IM, then hourly injections as needed of 12.5 or 25mgs. After 24-72 hours, participants treated with oral concentrate, initially in 1:1 dosage conversion rate, then triturated according to clinical response. Group 2 Haloperidol 5mgs IM initially, then 2.5 or 5 mg IM injections. Oral concentrate after 24-72 hrs (oral concentrate form). Sample size for each group Group 1 - 25 Group 2 - 27. Numbers needed to treat Loxapine vs. haloperidol for CGI scale for those with marked improvement-2(2.8). Loxapine vs. haloperidol for CGI scale for those slightly ill-26 (26.09).</td>
<td>10 days (IM for between 24 -72 hrs and then orally up to 10 days).</td>
<td>Response rate. Hostility, unco-operativeness. Sedation - considered as therapeutic end-point and noted in the first hour for most participants. Within 12 hours, 24/25 group 1 and 22/27 group 2 were asleep. Therapeutic response did not differ significantly between the two treatment groups (p&gt;0.05). <strong>Adverse reactions</strong> Dystonia (14), akathisia (14); four removed from study due to adverse reactions (two in groups 1 (increased blood pressure, tachycardia), two in group 2 (severe akathisia and severe dystonia). No significant difference between the two groups in the number and severity of adverse events.</td>
</tr>
</tbody>
</table>

Notes on quality assessment and comments
- Analysis of drop-outs mentioned.
- Drug administration not blinded, but evaluation of effects blinded.
- Medical history of service users not known/reported.
## Study: Wright (2001)

- **Country**: multi-country
- **Source of funding**: Eli Lilly.
- **Evidence level**: 1+

### Population
- Clinically agitated and appropriate from IM treatment.
- Exclusions: pregnancy, lactation, serious medical illness.

### Methods
- Allocation: randomised.
- Blindness: double-blind.
- Duration: 24 hours.
- Setting: multi-centred, multi-country - doesn’t specify setting.
- Baseline comparability: not stated.

### Main intervention(s) and comparisons
- **Group 1**: Olanzapine 10mgs IM.
- **Group 2**: Haloperidol 7.5mg IM.
- **Group 3**: Placebo IM.
- Sample size for each group:
  - Group 1 - 131
  - Group 2 - 126
  - Group 3 – 54.

### Follow-up period
- 24 hours.
- PANSS was completed at 15, 30, 45, 60, 90 and 120 minutes following first injection.
- Other measures more ad hoc.

### Outcomes (primary, secondary and adverse events)
- There was a significant difference between placebo and groups 1 and 2 at two hours. PANSS excited component (SD=6.1 for group 1 and SD=5.2 for group 2) (Also measured using ABS (SD=0.6 and 0.1) and agitation calmness evaluation scale response rate (ACESR) SD=1.6 and 0.2). No significant difference in baseline scores on PANSS or other scales).
- Significant difference between olanzapine and haloperidol at 15, 30 and 45 minutes after first injection. Olanzapine was more effective. Significant difference between group 1 and group 3 at all points from baseline, and between groups 2 and 3 from 30 minutes onwards.
- Other significant differences between groups on PANSS ABS and ACESR.

### Adverse reactions
- Significantly more received benzodiazepines in group 3 that in group 1 (p=0.002) or group 2 (p=0.009).
- Dystonia - none in group 1; 9 in group 2.
- EPS 1 in group 1; 7 in group 2.
- No significant QTc interval changes from baseline in any group.
- Significantly more group 2 received anticholinergics than in group 1 (p<0.001) or group 3 (p=0.003).

### Notes on quality assessment and comments
- Baseline comparability is not stated.
- Authors conclude that IM olanzapine is a rapid, effective and safe treatment for acute agitation in schizophrenia. However, service users were not very agitated as all signed consent forms.
<table>
<thead>
<tr>
<th>Study</th>
<th>Population</th>
<th>Methods</th>
<th>Main intervention (s) and comparisons</th>
<th>Follow-up period</th>
<th>Outcomes (primary, secondary and adverse events) effect size, p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wyant et al. (1990)</td>
<td>15 male service users with schizophrenia, hospitalised for acute treatment.</td>
<td>Allocation: randomised.</td>
<td>Group 1 Haloperidol 5mg IM.</td>
<td>Two hours (15, 30, 60, 120 minutes).</td>
<td>CGI (Donlon, 1979) Sodium amytal and midazolam were more effective in terms of motor agitation over two hours. (P&lt; or =0.05) There was no significant difference in hostility ratings (p&lt;0.10). Adverse effects were not reported.</td>
</tr>
<tr>
<td>Country: USA</td>
<td>Exclusions: not mentioned.</td>
<td>Blindness: single-blind.</td>
<td>Group 2 Midazolam 5mg IM.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Source of funding: not</td>
<td>Duration: two hours.</td>
<td>Setting: in-patient.</td>
<td>Group 3 Sodium Amytal 250mg IM.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>specified.</td>
<td>Baseline comparability: yes in terms of age, unclear in terms of diagnosis.</td>
<td></td>
<td>Sample size for each group</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Evidence level: 1-</td>
<td>Modified CGI scale used for ratings.</td>
<td></td>
<td>Group 1 - 5</td>
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<td>Group 2 - 5</td>
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<td></td>
<td></td>
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<td>Group 3 - 5</td>
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</table>

Notes on quality assessment and comments
- This study has several limitations that could have led to its exclusion - small sample size, single blind and side-effects not discussed. The follow-up time was also extremely short. The authors recognise the need for further studies with larger sample size comparing midazolam with lorazepam.
## III Staff and service user perspectives on rapid tranquillisation

<table>
<thead>
<tr>
<th>Study</th>
<th>Study design</th>
<th>Aims of study</th>
<th>Outcome measures</th>
<th>Results</th>
</tr>
</thead>
</table>
• Route of choice.  
• Other drugs used if situation not rapidly resolved by drug of choice.  
• Mean dose (only second study).  
• Desired end-point (only second study).  
• Time to desired end-point (only second study). | Both studies used the same scenario of a psychotic patient and asked doctors to list treatment choices. |
| Country: UK | Setting: in-patient | | | |
| Evidence level: 2- | Population:  
Study 1: 50 consultant psychiatrists.  
Study 2: 118 psychiatrists, including consultants, registrars and junior doctors. | To assess whether there had been changes in practice following the issue of RCPsych’s guideline (1994) on the short-term management of violence. | | |
| | | | Study 1 (1990) 56% response rate.  
Drug of choice: chlorpromazine.  
Route of choice: 93% favour IM, 7% favour IV.  
Other drugs used if situation not rapidly resolved by drug of choice: 42 other drugs suggested - no consensus. | |
| | | | Study 2 (1994-1995) 77% response rate (69% response rate from consultants)  
Drug of choice: chlorpromazine 25%; haloperidol +lorazepam 22%; haloperidol alone 16%. Junior doctors were more likely than consultants to use a short-acting antipsychotic and a benzodiazepine as first line treatment (p<0.05).  
Route of choice: 93% favour IM/oral, 7% favour IV.  
Mean dose: chlorpromazine 103.4mg; haloperidol alone 9.6 mg; haloperidol +lorazepam 9.2mgs of haloperidol.  
Other drugs used if situation not rapidly resolved by drug of choice: 14% would use clopoxol acuphase as first line treatment either alone of with other drugs. 62% would consider clopoxol acuphase at some point in first 24 hours.  
Desired end-point: patient non-sedated but calm 59%; patient sedated but mobile 31%; patient asleep 10%.  
Time to desired end-point: within 1 hour 21%; within 6 hours 43%; within 12 hours 16%; within 24 hours 10%; over 24 hours 6%. | |

**Reviewer’s comments**

Author notes that in 1990, only 7% of doctors used a short-acting antipsychotic + a benzodiazepine; in 1994 35% would (p<0.001). However, only consultants were surveyed in 1990 and the study showed that significantly more junior doctors than consultants would choose this drug combination in 1994 (p=0.05).  
Author notes that haloperidol continued to be prescribed at a higher dosage equivalent than chlorpromazine, even when used in combination with a benzodiazepine.  
Author notes that IV administration is unpopular, despite reports that diazepam plus haloperidol is the most rapid effect method of rapid tranquillisation.  
Author notes that while the preferred end-point is non-sedated but calm, most advocate highly sedative drugs, i.e. benzodiazepines.  
Author suggests that the introduction of local protocols in line with RCPsych guidance many have further altered doctors’ choices and suggested that an additional survey is required.
<table>
<thead>
<tr>
<th>Source</th>
<th>Study design</th>
<th>Aims of study</th>
<th>Outcome measures</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duxbury (2002)</td>
<td>Pluralistic evaluation/questionnaires, taped interviews and incident forms (convenience sample).</td>
<td>To assess the views of service users, nurses and medical staff concerning the approaches used to manage service user aggression.</td>
<td><em>(The management of aggression and violence attitude scale - MAVAS). MSOAS.</em></td>
<td>• Validity of MAVAS assessed.</td>
</tr>
<tr>
<td>Country: UK</td>
<td>Country: UK</td>
<td></td>
<td></td>
<td>• Incidents of aggression far outweigh actual acts of violence (13.5%). However, medication was employed in 25% of incidents in isolation and when viewed with restraint and seclusion, it was noted that these three interventions accounted for 47% of responses in some form of combination.</td>
</tr>
<tr>
<td>Evidence level: 2-</td>
<td>Evidence level: 2-</td>
<td></td>
<td></td>
<td>• Staff and service users had opposing views about the causation and specific management of service user aggression and violence.</td>
</tr>
<tr>
<td></td>
<td>Population: service users (80), nurses (72), medical staff (10). 221 incidents over six months.</td>
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<td></td>
<td>• Situational factors - interaction of internal and external.</td>
</tr>
<tr>
<td></td>
<td>Setting: three acute wards.</td>
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<td>• Staff tend to attribute disturbed behaviour to internal factors, whilst service users attribute it to external factors; other causal factors not discussed here.</td>
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<td><strong>Management style</strong></td>
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<td>• Staff want seclusion to continue, service users do not (p&lt;0.000). Service users are not aware of de-escalation in use or its value (p=0.000).</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• More agreement that there is a need for alternatives.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Analysed internal, external and interpersonal models to explain reasons for service user aggression (internal - aggression by individual service user; external environmental factors; situational – interaction of internal and external).</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Both staff and service users see themselves as victims.</td>
</tr>
</tbody>
</table>

**Reviewer’s comments**

- The study did not specifically ask service users to evaluate their feels concerning rapid tranquilisation. However, the author comments that the disparity between actual violence reported in incident reports and the use of medication is a worrying trend.
- The issue of medication was evaluated in terms of a general ‘controlling’ style, which both staff and service users expressed a desire to move away from.
- Authors conclude that staff training and effective interpersonal skills are necessary.
### Study Design
- Survey by structured telephone interviews.
- Setting: community and in-patients.
- Population: 65 English speaking acute care service users who had been forcibly medicated, after discharge to community.

### Aims of Study
- To examine service users’ attitudes after they had been forcibly medicated.
- Attitudes and feelings after rapid tranquilisation.

### Results
- The studies took place around two weeks after the service users had been discharged. This meant that there was a large loss to follow-up. Of 65 service users, over half were lost through re-hospitalisation (7), general loss to follow-up (19) and lack of recall (3) = 45%. A further six refused to be interviewed. Of the 30 who agreed to be interviewed, only 47% had been forcibly injected; the rest had taken oral medication under duress. For between 16-24% of questions, the response 'unsure' was selected.
- Many service users reported that refusal of medication had been caused by fear of adverse reactions (57%), fear of addiction (17%) and the belief that they were not unwell (30%).
- In relation to the procedure, they reported feelings of: anger (40%); helplessness (33%); fearfulness (23%); relief (23%); embarrassment (13%).
- 60% retrospectively believed rapid tranquilisation had been a good thing.
- 43% asserted that they should be coerced in a similar situation in the future.
- 43% felt that doctors should not be allowed to force service users to take medication.
- 53% felt they would take it voluntarily.

### Reviewer’s Comments
- There was a large loss to follow-up; the percentage retrospectively accepting rapid tranquilisation needs to be considered in the light of this. Authors noted that it would not be surprising if the un-interviewed service users felt more negatively about rapid tranquilisation.
- Authors noted that some of the respondents may have been biased towards a positive response.
- The results of this study therefore need to be treated with caution, despite the importance of the themes it outlines.
### Study Design
- **Country:** Sweden
- **Evidence level:** 2-
- **Source:** Haglund et al. (2003)
- **Study design:** Semi-structured interviews (performed over >nine months).
- **Population:** 11 service users (with mood, psychotic and personality disorders; had to have been forcibly medicated during current stay) and eight nurses (three interviewed twice).
- **Setting:** five locked wards in a department of psychiatry.

### Aims of Study
- **To describe service users' and nurses’ experiences before/during/after an incident of forcible medication.**
- **To explore perceived alternatives to forcible medication.**
- **To compare views of service users and nurses on service user’s approval of forced medication.**

### Outcome Measures
- **Nurse perceptions.** Analysed with content analysis.

### Results
- **15 categories were identified (three related to the disease - awareness, changed behaviour, fear – eight to forcible medication - acceptance, disapproval, do not remember, no reaction, non-acceptance, psychological discomfort, resignation, violation of integrity - four to the drug - difficult to manage troublesome situations, fear, improvement in health, psychological and physical discomfort).**
- **Some service users and nurses stated that service users did not remember anything before, during or after forced medication.**
- **Retrospectively approved on the medication.**
- **One service user gave vague approval; the rest did not perceive that it had helped.**
- **According to nurses, seven service users retrospectively approved of forced medication.**
- **Nurses mentioned no alternatives; all service users mentioned at least one alternative (dialogue, more explanation of ill-health, coaxing, waiting, not medication, not injection). Nurses perceived measures necessary to improve health.**
- **Nurses focused more on positive effects of drug; service users stressed the negatives.**
- **Nurses often felt the service user had no response, when there was psychological discomfort.**
- **Service users were more likely to accept forced medication from a nurse they knew.**
- **Service users wanted more dialogue with psychiatrist and staff.**

### Reviewer’s Comments
- 15 service users were eligible, four refused to participate.
- Authors note that service user and nurse perceptions of forced medication differ, with service users finding it far more unacceptable.
- Authors stress that less service users retrospectively approved of forced medication than nurses thought.
- Authors stress that these results may not be generalisable, as all took place in one psychiatric department. Study design also negates generalisability.
- Interviews were conducted until no new themes emerged.
Violence: The Short-Term Management of Disturbed/Violent Behaviour in Psychiatric In-patient and Emergency Departments Guideline

<table>
<thead>
<tr>
<th>Source</th>
<th>Study design</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Hyde et al. (1996)</td>
<td>Database audit.</td>
<td>• Audit of services, including a service user satisfaction questionnaire.</td>
<td>• Nurse-run interactive computer system, the psychiatric studies in aggression database, included a service user satisfaction questionnaire on discharge.</td>
<td>• Non-Caucasians were over represented in violent incidents with physical threat (p=0.01).</td>
</tr>
<tr>
<td>Country: UK</td>
<td>Setting: psychiatric intensive care unit.</td>
<td></td>
<td></td>
<td>Previous forensic history was associated with more violent means of attack</td>
</tr>
<tr>
<td>Evidence level: 2-</td>
<td>Population: 251 in-patients.</td>
<td></td>
<td></td>
<td>The percentage of admissions mirrored the percentage of black and ethnic minorities in the catchment population (11%).</td>
</tr>
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<td></td>
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<td></td>
<td></td>
<td>Service user dissatisfaction scores were obtained on 170/251 (67.7%) service users. However, the 12-item questionnaire did not specifically ask service users about their feeling toward rapid tranquillisation.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>However 'non-understandable' violence did correlate significantly with dissatisfaction (p=0.013).</td>
</tr>
</tbody>
</table>

Reviewer’s comments

- The study did not specifically ask service users to evaluate their feelings concerning rapid tranquillisation. The fact that general dissatisfaction does not correlate specifically with rapid tranquillisation does not therefore mean that service users did not have some level of dissatisfaction associated with this intervention.
- Authors note that further research is needed to examine the role of ethnic groups in violence and also the factors influencing dissatisfaction.
<table>
<thead>
<tr>
<th>Source</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Schmeid (1983)</td>
<td>Cross-sectional.</td>
<td>To access relative acceptability of rapid tranquillisation or seclusion to service users.</td>
<td>Service users and staff were surveyed about:</td>
<td>130 interventions using seclusion, rapid tranquillisation or both took place involving 58 service users (out of 348 admitted).</td>
</tr>
<tr>
<td>Country: Switzerland</td>
<td>Setting: regional psychiatric university hospital.</td>
<td></td>
<td>• reasons for interventions (diagnosis, assault, other disturbance, unjust, reason unclear)</td>
<td>Service users found rapid tranquillisation more unacceptable than seclusion or restraint - overall p=0.01; for men only p=0.001.</td>
</tr>
<tr>
<td>Evidence level: 2-</td>
<td>Population: 348 service users.</td>
<td></td>
<td>• who instigated intervention(self, nurse, another, unclear)?</td>
<td>Women were more assaultive than men p=0.001.</td>
</tr>
</tbody>
</table>

**Reviewer’s comments**

Many service users were unclear on their feelings about these interventions and did not know who had instigated them. The authors note that this was particularly true for male service users, many of whom had alcohol related problems.

This is now an old study and although rapid tranquillisation was the least acceptable of these interventions, it is not possible to generalise whether service users in the UK also prefer seclusion to rapid tranquillisation. The author suggests that it is beneficial for service users to discuss their feelings after the use of one of these interventions.
<table>
<thead>
<tr>
<th>Source</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Schwartz et al. (1988)</td>
<td>Retrospective survey. Setting: university teaching hospital. Population: 25 involuntarily medicated service users (five service user excluded because of organic brain disorder and one transferred).</td>
<td>To assess the views of service users, on being given medication against their will.</td>
<td>Service user attitudes (involuntary treatment questionnaire - measured on 7-point scale). Service user’s mental state (BPRS) at point of involuntary medication and on discharge. Demographic details. Clinical histories.</td>
<td>17/25 service users retrospectively agreed with their involuntary medication. (compliers). 7/25 service users retrospectively disagreed with their involuntary medication. (non-compliers). 1/25 service users did not comment on their involuntary medication. Compliers had significantly less hospitalisations than non-compliers (p=0.02). Compliers recognised that they had an illness that required hospitalisation, agreed that hospitalisation had been necessary and that it had been helpful. Non-compliers disagreed with all three statements (p=0.01). Compliers agreed that hospitalisation had been necessary even where it was involuntary; non-compliers did not (p&lt;0.001). Compliers agreed that should they become ill again and be hospitalised (involuntarily if necessary) they should be treated against their will; the non-compliers did not (p&lt;0.001). No significant differences were noted on BPRS. However, marked differences were noted between thought disturbances and hostile-suspiciousness between compliers and non-compliers. On re-analysis, grandiosity (p=0.08) and hostility (p=0.021) were found to be significant at baseline. Seven of the eight items were found to be significant at discharge: conceptual disorganisation (p=0.05), mannerisms and posturing (p&lt;0.01), grandiosity, hostility, suspiciousness, uncooperativeness, unusual though content (p&lt;0.001). Reasons for refusing medication included: denied need for medication, fear of side-effects, confusion or psychotic idealisation, or did not know or gave no reason. Service users who persistently disapproved of the decision to override them in their treatment were highly grandiose, engaged in denial of psychotic proportions, and responded poorly to treatment.</td>
</tr>
</tbody>
</table>

**Reviewer’s comments**
- Authors argue that the decision by service users to refuse psychotropic medication is normally a manifestation of illness and does not reflect autonomous functioning or consistent beliefs about mental illness or its treatment. Therefore, they argue that judicial review should always be a last resort.
- Authors included all incidents of involuntary medication recorded in this period.
# IV PRN medication

<table>
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<tr>
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</tr>
</thead>
</table>
• High-pattern use of PRN.  
• Reasons for service user behaviour prior to PRN medication.  
• Clinician’s response to high PRN/stat use.                                                                 | • Almost a quarter of service users received PRN medication during the study month.  
• Benzodiazepines were the medication of choice for almost 60% of episodes.  
• 27 service users received 44% of the PRN/stat doses. All other analyses focuses on these 27 service users (three acute, 17 chronic and seven psychogeriatric).  
• Of these 27 service users, there were differences between the use of PRN medication with service users with discrete period of disruptive behaviour and those who had intermittent periods throughout their stay. The following results were significant: half of the intermittent vs. over 90% of those with discrete episodes had an increase in their medication or had their medication changed during the study month (p=0.03).  
• Authors noted that 12/27 service users who had anti-psychotic serum levels drawn either before or after the study were found to be in a sub-therapeutic range, with two-thirds below detection. |

**Reviewer’s comments**

- Authors cross-referred logs of PRN use with service user medical records in case of recording bias. Authors suggest that this allowed for a valid picture of PRN/stat medication use in the hospital, but acknowledged that reporting bias may be a problem.
- Authors note that there was little turnover during the month amongst chronic and psychogeriatric service users. There was higher turnover amongst acute service users, meaning that the number of service users exceeded the number of beds. They acknowledge that more service users that 973 were involved in the study by working out all figures on the basis of 973 service users. This appears to be a serious weakness in the study.
- Authors recommend that protocols are established to guide clinicians’ use of PRN. They argue that plasma levels need to be measured to ensure adequate dosage of psychotropic medication.
### Source

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Craven et al. (1987)</td>
<td>Retrospective chart survey.</td>
<td>To assess the use of PRN medication: neuroleptics; anti-Parkinsonians; sedative-hypnotics (benzodiazepines and chloral hydrate); antidepressants; lithium; barbiturates and analgesics.</td>
<td>• Drug name. • Dose. • Route of administration. Instructions for use if stopped prior to automatic stop order after seven days. • Relationship between diagnosis and PRN.  Measured by PRN medication sheet.</td>
<td>• 88 service users had PRN prescriptions written for a total of 1,041 prescriptions. • 36% of PRN prescriptions were for neuroleptics, 31% for anti-Parkinsons, and 30% for sedative-hypnotics. No PRN prescriptions were written for lithium or antidepressants. • 97% of PRN prescriptions were prescribed for service users already receiving regular psychotropic medication. • Rate of PRN prescriptions per week for each service user for neuroleptics, for anti-Parkinsons and sedative-hypnotics were calculated. Two independent variables were significant: diagnosis of personality disorder (p&lt;0.0006) and age of 50 or over (p&lt;0.03). • The following prescriptions were significantly correlated with the following diagnoses: - rate of neuroleptics and personality disorder (p&lt;0.02), mania (p&lt;0.05) - rate of anti-Parkinsonians and schizophrenia (p&lt;0.0002), mania (p&lt;0.0005), personality disorder (p&lt;0.05). - rate of sedative/hypnotics and personality disorder (p&lt;0.0001) 50 years and older (p&lt;0.004). • No specific indications were given in 47% of prescriptions. • Minimum interval between doses not stated in 75% of prescriptions. • Maximum dosage in 24 hours not given in 14% of prescriptions. • Only 25% of prescriptions were discontinued by physician’s order. • Only 50% of prescriptions were administered. • Independent variables were significantly associated with the rate of PRN administrations: diagnosis of personality disorder (p&lt;0.0001), age 50 and over (p&lt;0.007), diagnosis of mania (p&lt;0.04). • 28% of PRN medication was given during the night time shift, 17% during evening shift and 55% during night time shift. Nursing staff recorded use of PRN medication for 91% of administrations. 11% of prescriptions were used for multiple reasons, but in where physician specified an indication there was never more than one. Of benzodiazepine prescriptions, 15% were given for agitation. This was never specified as an indication for a benzodiazepine by a physician. 108 prescriptions for agitation were written (neuroleptics), and 295 administrations were made (neuroleptics, benzodiazepines, chloral hydrate).</td>
</tr>
</tbody>
</table>

### Reviewer’s comments

- Only the first admission of any in-patient was included in study.
- The authors question the need for such a high rate of PRN medication when physicians are in residence at evenings and weekends.
- Authors postulate that service users with personality disorder were given PRN medication as a quick solution to agitation rather than attempting alternative approaches.
- Author point out that the lack of clarity around the gap between doses and maximum daily dose allows for a service user to receive a dose twice that prescribed in 12 hours.
- Authors suggest that PRN medication should be given in emergencies only and that clear indications, minimum time between doses, maximum daily dose and monitoring of patients’ clinical condition and vital signs, as well as the duration of order, should always be specified. In addition, at a first time admission a PRN prescription should be valid for one dose only, subject to physician review.
- The authors note that the findings of the study cannot be generalised.
### Source

Geffen et al. (2002a)

**Country:** Australia

**Evidence level:** 2-

### Study design

Questionnaire survey.

Setting: in-patient department in two metropolitan hospitals.

Population: nurses and doctors (n=unclear).

### Aims of study

To examine the beliefs of doctors and nurses in in-patient psychiatric units about PRN medication for psychiatric disorders.

### Outcome measures

- Indications for administration of PRN.
- Most effective medications (from a range).
- Preferred and avoided medications.
- Methods used to assess response to PRN.
- Alternatives to PRN and how often they used them.

### Results

- Face validity was established. 98% response rate.
- Nurses selected more indicators for PRN antipsychotics than doctors (p<0.05).
- Doctors selected more indicators for PRN benzodiazepines (p<0.05).
- Doctors and nurses did not differ in the number of selected indications for using anticholinergics.
- For agitation:
  - 56% nurses viewed benzodiazepines and 86% viewed antipsychotics as effective. 60% preferred antipsychotics.
  - 94% of doctors viewed benzodiazepines and 81% viewed antipsychotics as effective. 55% preferred benzodiazepines.
- For acute control of psychotic symptoms:
  - 58% nurses viewed benzodiazepines and 99% viewed antipsychotics as effective. 87% preferred antipsychotics.
  - 32% of doctors viewed benzodiazepines and 80% viewed antipsychotics as effective. 64% preferred benzodiazepines.
- Nursing staff identified more non-pharmacological techniques for managing both aggression and psychotic symptoms than doctors, and reported using them.
- Junior staff, both medical and nursing, had less knowledge of non-pharmacological alternatives to PRN medication than senior staff.

### Reviewer’s Comments

- Authors note that doctors’ and nurses’ views about the use of PRN medication differ, making it important for doctors to specify the usage when writing PRN prescriptions.
- Authors note that despite the known properties of benzodiazepines, many staff were reluctant to use them as PRN medication and had views at odd with the medical properties of these drugs.
- The authors argue that both nurses and doctors require education to achieve best practice with PRN medication.
- Authors note that the results may not be generalisable, due to selective sampling.
### Study Details

<table>
<thead>
<tr>
<th>Source</th>
<th>Study design</th>
<th>Aims of study</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Geffen et al. (2002b)</td>
<td>Retrospective chart review. Setting: in-patient department in two metropolitan hospitals. Population: 184 administrations of PRN medication.</td>
<td>To examine the use of PRN medication in hospitalised service users with psychiatric disorders.</td>
<td>• PRN prescription. • PRN administration. • PRN outcomes. • Demographic details, diagnoses and regularly prescribed medications were also noted.</td>
<td>• PRN medication was administered during the acute phase of 83% of admissions. • PRN were usually antipsychotics, benzodiazepines and/or anticholinergics. • Coprescription of typical antipsychotics PRN with atypical antipsychotics was common (64%). • Higher daily doses of PRN medication were given to manic service users, males, younger service users and those with substance abuse disorders. • PRN usually specified a maximum daily dose (87%) but rarely gave indications for use (6%). • 49% of PRN was given for agitation. However, administration records frequently failed to specify reason for use (48%) or outcome (64%). • Unit staff noted medication related morbidity in 37% of service users receiving PRN medication, compared to 3% on only regular scheduled medication. • EPS were most frequently associated with the administration of PRN haloperidol.</td>
</tr>
</tbody>
</table>

### Reviewer’s Comments

- Authors note that the retrospective design is a weakness, but that it has the advantage of not biasing the practices being audited.
- Authors suggest that use of benzodiazepines and training may reduce medication related morbidity.
### Walker (1991)

**Country:** USA  
**Evidence level:** 2-

#### Study design
- Retrospective chart survey.
- Setting: 35-bed voluntary psychiatric in-patient unit.
- Population: 150 consecutive adult admissions.

#### Aims of study
- To examine the use of PRN medication (antipsychotic drugs, anxiolytics, antidepressants, hypnotics).

#### Outcome measures
- Indication for PRN drugs.
- Doses prescribed.
- Clarity and completeness of orders.
- Frequency of adverse effects.
- Effectiveness of PRN drugs.

#### Results
- PRN medication was given to 70% of service users.
- 9% of PRN prescriptions were for antipsychotics, 31% for anxiolytics, and 41% for hypnotics. No PRN prescriptions were written for lithium or antidepressants.
- There was no significant correlation between a diagnosis and PRN medication.
- There was no significant correlation between ‘anxiety’ or ‘agitation’ and prescribed dose.
- PRN was most commonly prescribed for anxiety with agitation - the most common sign. Several drugs were used, including lorazepam, thioridazine, haloperidol and chlorpromazine.
- For service users taking hypnotics and other PRNs the combination of triazolam and alprazolam was most common.
- 17% of service users had at least one order where dosing was not specified; 30% of indications did not specify the drug.
- Service users with symptoms associated with anxiety were significantly more likely to receive anxiolytics; while service users with symptoms associated with psychosis were more likely to receive antipsychotics (p<0.0001).
- Effectiveness of drugs was noted in 45% of instances for all drugs except hypnotics. Anxiolytics were significantly more likely to be judged effective than antipsychotics (p<0.05).
- Hypnotics were significantly associated with mania and schizophrenia (p<0.02).

#### Reviewer’s comments
- Only the first admission of any service user was included in the study.
- Author notes that few service users had personality disorder - an important difference from the study by Craven.
- Controls were not mentioned in the study.
### 5.9 Accident and emergency settings

<table>
<thead>
<tr>
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<th>Design/methods</th>
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<th>Outcome measures</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Bacaner (2002)</td>
<td>Cross-sectional survey.</td>
<td>To determine the extent to which depressive and alcoholic symptoms are related to aggressiveness in male ED service users.</td>
<td>Self-reported levels of aggressiveness, anger problems, Zung depressive symptoms, CAGE alcoholic dependence, demographics.</td>
<td>Depressive symptoms were linked three times more strongly than alcoholic symptoms to aggressiveness.</td>
</tr>
<tr>
<td>Evidence level: 2+</td>
<td>Population: 302 non-critical male service users.</td>
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</table>

**Reviewer’s comments**
- Authors conclude that an abbreviated screening tool that could be used in Eds, incorporating Zung and CAGE items, may identify males who would benefit from further evaluation for depression, alcoholism, and aggressive behaviour.
<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>Beck et al. (1991)</td>
<td>Case-comparison, using record review and staff interviews.</td>
<td>To ascertain clinical and demographic characteristics that distinguish dangerous from non-dangerous service users.</td>
<td>• Demographic and clinical data.</td>
<td>• Women more often were violent, and men more often potentially violent, made threats or were a source of concern to staff (p&lt;0.03).</td>
</tr>
<tr>
<td>Country: US</td>
<td>Setting: psychiatric emergency service of a city hospital.</td>
<td>To explore whether risk factors for violence in the community are also risk factors for violence in a psychiatric emergency room.</td>
<td>• Type and context of service user’s violent behaviour.</td>
<td>• Study service users were, on average, four years younger than control service users (p&lt;0.005), more often brought in by police, were far more often put in restraints (59% versus 4%) or hospitalised (62% versus 29%).</td>
</tr>
<tr>
<td>Evidence level: 2-</td>
<td>Population: 99 service users identified over six months as dangerous i.e. violent (evidence of assault or battery) or potentially violent (verbal threat or staff impression of poor control and anger or agitation), and 95 control service users, judged not to be violent or potentially violent.</td>
<td>To identify situational, demographic or clinical variables that distinguish service users who are hospitalised from those who are not.</td>
<td>• Assessment, treatment and disposition of the service user.</td>
<td>• Psychotic service users who were restrained were 6.36 times more likely to be hospitalised than were psychotic service users who were not restrained (p&lt;0.05).</td>
</tr>
<tr>
<td></td>
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<td></td>
<td>• Power of variables that relate to violence in the community to predict violence in the emergency setting.</td>
<td>• Non-psychotic service users who were restrained were 5.36 times more likely to be hospitalised than non-psychotic service users who were not restrained (p&lt;0.03).</td>
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<td>• Route to emergency room was related to restraint of dangerous service users. Service users brought in by police were more likely to be put into restraints than service users brought in by others, more likely than service users who came in alone.</td>
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<td>• Race, marital status, diagnosis and intoxication did not relate to current or past violence.</td>
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<tr>
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<td></td>
<td>• Diagnosis and demographic variables (marital status and employment) did not distinguish dangerous service users from others with sufficient precision to be clinically useful in assessing current dangerousness and need for hospitalisation</td>
</tr>
<tr>
<td></td>
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<td></td>
<td>• Clinically important data are the service user’s presentation in the psychiatric emergency services and reports of the service user’s behaviour in the immediate or recent past.</td>
</tr>
</tbody>
</table>

**Reviewer’s comments**

- Patient characteristics (demographic), prediction and risk factors, restraint.
- The setting of this study is a psychiatric emergency room and therefore not necessarily equivalent to a UK A&E department.
- Authors note study limited by reliance on self-report for history of violence
- Reviewer notes that the study allows no analysis of causation, for example, whether being brought into emergency services by police contributes to dangerousness.
### Source
Binder & McNiel  
Country: US  
Evidence level: 2-  

<table>
<thead>
<tr>
<th>Design/methods</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Cross-sectional survey, conducted by telephone. Setting: 20 psychiatric emergency rooms. Population: 20 medical directors.</td>
<td>To assess how acutely violent service users are managed in psychiatric emergency rooms.</td>
<td>ER characteristics. Medical director’s practices in the management of acutely violent service users.</td>
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</table>

#### Reviewer’s comments
- Sampling techniques are good – stratified in terms of geography in the US, selected if their ER was a receiving unit for acutely violent service users, and whether the medical director directly participated in the evaluation and treatment of such service users.
- Authors note that the sample size is small, which limits generalisability, but the representativeness of the sample, its national scope and the consistent findings suggest the value of further investigation with larger samples.
- Results suggest that the strategies most frequently advocated in recent review articles for the assessment and management of violent service users are not generally applied by those responsible for the emergency management of acutely violent service users.
- Clinicians appear to place highest priority on prevention of service user and staff injuries by rapidly reducing violent behaviour, through restraints and intramuscular medications, typically a combination of neuroleptics and benzodiazepines, irrespective of diagnosis.
- Authors suggest that one could argue that these practices involve risks of excessive coercion, overmedicating service users, and exacerbating underlying medical conditions. On the other hand, the clinical experience of practitioners suggests that these strategies rapidly ameliorate acute violence and thereby reduce the risk of injury.
<table>
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</tr>
</thead>
<tbody>
<tr>
<td>Burns et al. (1993)</td>
<td>Cross-sectional</td>
<td>To determine what events emergency nurses deem most critical in terms of</td>
<td>• Evaluation of an event’s ‘critical-ness’ using a Likert scale.</td>
<td>• ‘Death of a co-worker’ and ‘suicide of a co-worker’ were ranked second and third respectively on the critical list.</td>
</tr>
<tr>
<td></td>
<td>survey with</td>
<td>violence.</td>
<td>• Interview data about examples of critical incidents and experiences of debriefings.</td>
<td>• Many nurses referred to examples of violence in the emergency department as critical incidents. This included threats of injury to staff, service users with weapons, violent service users who were acutely psychotic or on drugs, and drug and gang activity.</td>
</tr>
<tr>
<td></td>
<td>interviews.</td>
<td>To evaluate the effectiveness of the debriefing process.</td>
<td></td>
<td>• Interviewees felt that the administration was not concerned for their personal safety.</td>
</tr>
<tr>
<td></td>
<td>Population: 682</td>
<td></td>
<td></td>
<td>• Many nurses felt that debriefings were helpful and that critical incident stress debriefing teams should formulate strategies for involving nurses in the debriefing process.</td>
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<td></td>
<td>emergency nurses.</td>
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</table>

**Reviewer’s comments**
Provides general information on nurses’ views of the management of violent incidents in an emergency setting.
<table>
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</tr>
</thead>
<tbody>
<tr>
<td>Country: UK</td>
<td>Setting: A&amp;E department of general hospital.</td>
<td></td>
<td>Types of assault.</td>
<td>In four of the last 20 incidents recorded, the violent service user was known to have a psychiatric illness.</td>
</tr>
<tr>
<td>Evidence level: 2-</td>
<td>Population: 102 A&amp;E staff (283 incidents).</td>
<td></td>
<td>Injuries received.</td>
<td>Nursing staff and male doctors were most frequently assaulted; receptionists least frequently.</td>
</tr>
<tr>
<td></td>
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<td></td>
<td>Weapons used.</td>
<td>Recording of information was haphazard, sometimes due to pressures of time and circumstances, because they hadn’t been injured themselves or because they wanted to avoid being considered to blame if their names appeared frequently.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Characteristics of perpetrators.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Intervention used.</td>
<td></td>
</tr>
</tbody>
</table>

**Reviewer’s comments**
- Authors conclude fitted furniture and padded seating should be installed.
- Potential weapons should be stored out of sight.
- CCTV may deter casual hooliganism, but will be ignored by the wildly intoxicated.
- Security officers are uniformed and under-trained, so may aggravate situation.
- Staff should be aware of body language that signals an angry outburst (flared nostrils, staring eyes, aggressive stance, pointing and pacing) and of the risks associated with intoxication.
- Talk through emotions in a calm, non-judgemental manner to defuse anger.
<table>
<thead>
<tr>
<th>Source</th>
<th>Design/methods</th>
<th>Aims of study</th>
<th>Outcome measures</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cooper (1988)</td>
<td>Cross-sectional survey.</td>
<td>To analyse the antecedents and course of violent behaviour in service users</td>
<td>Sex.</td>
<td>30% had physically attacked another person immediately prior to</td>
</tr>
<tr>
<td>Country: US</td>
<td>Setting: general hospital emergency</td>
<td>presenting to a general hospital emergency room who were subsequently referred</td>
<td>Police involvement.</td>
<td>presentation in ER. Most of this violence had been perpetrated by non-</td>
</tr>
<tr>
<td>Evidence level: 2-</td>
<td>room and psychiatric unit.</td>
<td>to a psychiatric unit.</td>
<td>Socio-economic status.</td>
<td>psychotic individuals in the throes of interpersonal crisis.</td>
</tr>
<tr>
<td></td>
<td>Population: 34 service users</td>
<td></td>
<td>History of violence.</td>
<td>25% were found to be acutely intoxicated with alcohol, but intoxication</td>
</tr>
<tr>
<td></td>
<td>referred by emergency</td>
<td></td>
<td></td>
<td>may have gone undetected in many more.</td>
</tr>
<tr>
<td></td>
<td>department to psychiatric unit.</td>
<td></td>
<td></td>
<td>The majority of service users referred from ER to a psychiatric ward</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>were judged to be non-psychotic, presenting with situational crises and</td>
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<tr>
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<td></td>
<td></td>
<td></td>
<td>personality disorders, rather than a major mental illness.</td>
</tr>
</tbody>
</table>

**Reviewer’s comments**
- Prediction.
<table>
<thead>
<tr>
<th>Source</th>
<th>Design/methods</th>
<th>Aims of study</th>
<th>Outcome measures</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Erickson &amp; Williams-Evans (2000)</td>
<td>Cross-sectional survey.</td>
<td>To investigate the frequency of service user assaults on emergency nurses.</td>
<td>• Frequency of assaults against nurses.</td>
<td>• Response rate 98%.</td>
</tr>
<tr>
<td>Country: US</td>
<td>Setting: emergency departments of two hospitals.</td>
<td>To explore nurses’ attitudes about service user assaults.</td>
<td>• Rate of reporting of assaults.</td>
<td>• 82% of nurses had been physically assaulted by service users during their career; 56% within the preceding year.</td>
</tr>
<tr>
<td>Evidence level: 2-</td>
<td>Population: 55 emergency department nurses.</td>
<td>To determine whether a correlation exists between the prevalence of violence in the ED and nurses’ attitudes about violence.</td>
<td>• Perceptions of safety from, and expectations of, assault.</td>
<td>• 29% of these assaults were unreported.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Attitudes regarding legal and ethical issues.</td>
<td>• 50.9% of nurses had experienced one to three assaults during their career, but 10.9% had experienced more than 15.</td>
</tr>
<tr>
<td></td>
<td></td>
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<td></td>
<td>• 73% agreed that ‘nurses can expect to be physically assaulted at some time during their career’.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• 76% said their unit accepted service users that they were not staffed or equipped to handle.</td>
</tr>
<tr>
<td></td>
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<td></td>
<td></td>
<td>• 2% of staff felt safe ‘all of the time’; 34% felt safe ‘most of the time’; 15% felt safe ‘some of the time’; and 4% felt safe ‘none of the time.’</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• 91% believed that nurses have a right to take legal action against an assaultive service user, but only 32.7% stated that they would press charges.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• They report a significant negative correlation between rate of service user assaults and subsequent reporting of assaults.</td>
</tr>
</tbody>
</table>

**Reviewer’s comments**
- Environment
  - The environment within which ED nurses work is characterised by fear of assault, but also a degree of habituation to it and reluctance to report it.
  - Response rate is very high but the sampling method is not made explicit – there is a possibility that the respondents are not representative of their population.
  - Used ‘attitudes towards patient physical assault’ questionnaire, the reliability and validity of which has been previously reported.
  - They do not report the level of significance or the statistical method by which they arrived at the ‘correlation’ between frequency of assaults and subsequent reporting of assaults.
  - Majority of nurses seem to accept that ‘assaults are part of the job’.
<table>
<thead>
<tr>
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<th>Outcome measures</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Froust &amp; Rhee (1993) Country: US Evidence level: 2-</td>
<td>Prospective. Setting: emergency department. Population: all staff (not stated).</td>
<td>To determine the incidence of battery (wilful and unlawful use of force or violence on the person of another) against emergency department medical staff by service users or visitors.</td>
<td>- Type of battery.  - Staff and assailant characteristics.  - Place and time of day that assault took place.  - Restraint applied.</td>
<td>- Over nine-month study period, 19 instances of battery occurred, 13 of which involved kicking or punching. In no case was a weapon used.  - 10 incidents were committed against men, nine against women.  - All occurred in service user care areas, and most between 4pm and 8am.  - In 15 cases, the assailant was a man, in nine cases was on a psychiatric ‘hold’ (detention imposed due to being a danger to self, others or gravely disabled).  - In eight cases, battery occurred when the service user was restrained and four when service user was restrained but restraint was being modified.  - In only four cases were hospital incident forms filled out.</td>
</tr>
</tbody>
</table>

**Reviewer’s comments**

- **Prediction, restraint**
- The department’s unusual restraint policies were described, whereby all service users placed on psychiatric or substance abuse ‘holds’ (requiring that they are a danger to themselves, to others or gravely disabled) be restrained with a loosely applied cloth belt that encircles the abdomen. Four of the incidents occurred when the service user was in abdominal restraint only, and eight other incidents when in abdominal and extremity restraint. The restraint procedures were not described.
- Consistent with other studies, incidents were significantly under-reported.
- Authors recommend that strategies to prevent or control violence be concentrated on evening and nightshifts.
<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Garbrick et al. (1996)</td>
<td>Cross-sectional.</td>
<td>To determine the level of agreement between EPs and psychiatrists regarding psychiatric status and the need for acute psychiatric hospitalisation and treatment for service users presenting with alleged psychiatric complaints.</td>
<td>Physicians’ opinion on:</td>
<td>Of the 34 service users the psychiatrists believed needed acute hospitalisation, the EPs identified 64 and were unsure about another nine service users. Additionally, EPs believed that another 15 service users required acute hospitalisation, but these service users were subsequently released by the psychiatrists.</td>
</tr>
<tr>
<td>Country: US</td>
<td>Setting: emergency department. Population: emergency physicians (EPs), psychiatrists (numbers not stated).</td>
<td></td>
<td>• whether the service user was a danger to self, to others, or gravely disabled</td>
<td></td>
</tr>
<tr>
<td>Evidence level: 2-</td>
<td></td>
<td></td>
<td>• whether service user needed acute psychiatric hospitalisation or outpatient psychiatric care</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• whether service user’s primary problem was substance abuse or non-psychiatric illness</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• concordance in emergency physicians’ and psychiatrists’ assessments of service users and admission decisions.</td>
<td></td>
</tr>
</tbody>
</table>

**Reviewer’s comments**

- Moderate agreement between the specialists was demonstrated.
- Authors suggest that additional shared training between the specialities regarding criteria for admission vs. other alternatives would be advantageous.
- Authors note that this study addressed agreement in decision-making and not ‘correctness’ of decision-making. Follow-up of released service users to determine complications related to premature release would have strengthened this study.
- Also, a measure of the level of experience for the two groups may have helped explain some of the inter-group variation.
- There are some service users who fall into a ‘grey zone’ where the decision to treat as an in-patient or outpatient may not have a definitive answer, so assessment of inter-rater agreement and strength of conviction could help assess this factor.
### Source

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Lane (1986)</td>
<td>Case studies of three service users. Setting: emergency department. Population: three service users admitted to the emergency department.</td>
<td>To show how empathy can be employed in crisis intervention with violent service users.</td>
<td>• Methods of violence management employed in each of three cases.</td>
<td>• Through employing empathy, restraint and medical management of violence were obviated in these cases.</td>
</tr>
</tbody>
</table>

### Reviewer’s comments
- This is a study of only three cases, so generalisability is limited.
- The author describes how techniques employing empathy (a combination of the suspension of judgement and sympathetic and creative imagination) were used to manage violence where more severe measures might equally have been used.
- Author acknowledges that some service users may not allow this: that violence is multi-determined and that better outcomes result from responses tailored to the specific situation.
- Author argues that the focus in applying the scientific method to problems of human behaviour tends to neglect those areas that do not easily lend themselves to such an approach, but that the difficulties of measuring empathy should not preclude the study of the concept.
**Violence: The Short-Term Management of Disturbed/Violent Behaviour in Psychiatric In-patient and Emergency Departments Guideline**

<table>
<thead>
<tr>
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<th>Design/methods</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Lee (2001)</td>
<td>Cross-sectional survey. Setting: A&amp;E departments of two hospitals. Population: all 130 qualified A&amp;E staff.</td>
<td>To determine the amount of violence experienced by a sample of A&amp;E staff, and to explore the effect of aggression management training on self-efficacy in dealing with aggressive service users.</td>
<td>• Experience (for example, length of time working in A&amp;E). • Exposure to verbal and physical violence from service users in previous three months. • Aggression management training undertaken. • Age, gender, grade. • Difficult behaviour self-efficacy scale (DBSES).</td>
<td>• 76 (58%) responses (12 male, 64 female). • Verbal and physical violence were a common occurrence: 96% had experienced verbal violence in the preceding three months; 76% had experienced physical violence in the same period. • The type and amount of aggression training was variable, and consisted mainly of breakaway techniques, control and restraint techniques and little knowledge of de-escalation of situations. • Greater self-efficacy was observed in higher grade staff who had experienced higher levels of aggression. • Nurses’ aggression management training did not appear to equip them with the skills required to manage violent behaviour.</td>
</tr>
</tbody>
</table>

**Reviewer’s comments**
- The study did not specifically relate to psychiatric service users.
- The author recommends that aggression management training should encourage nurses to examine their beliefs about violence and should focus on diffusion and de-escalation of violence, rather than control and restraint techniques.
- The author notes that the study is limited by an imbalance of response by gender, although the proportion of male respondents was representative of the target population overall.
- The DBSES is a relatively new tool with little validation data available.
- The author notes that the association between self-efficacy and levels of violent behaviour encountered is not illuminated by this study.
- The author notes that unless the implementation of guidelines is mandatory, they may have little effect on the working environment.
### Source
Lillywhite et al. (1995)

#### Design/methods
1. Audit of interview rooms, ii) cross-sectional survey of staff.

   Setting: mental health service based in outpatient and casualty facilities in large city teaching hospital, and in separate in-patient site.

   25 interview rooms assessed.

   Population: 30 medical staff

#### Aims of study
To assess the safety of interview rooms in general hospital outpatients, general hospital A&E, and psychiatric hospital, according to 10 safety criteria.

To assess medical staff’s ratings of the relative importance of these 10 criteria.

#### Outcome measures
- 10 safety criteria of rooms.
- Staff ratings of safety criteria.

#### Results
A&E rooms scored least well in terms of suitability for interviewing potentially aggressive service users, scoring poorly on every criterion other than ‘alarm bell’.

This was due to:
- a) isolated position from other staff, especially at night when most psychiatric assessments take place
- b) cubicles used are cramped, have inadequate seating and lack of privacy
- c) A&E is where junior doctors are most likely to assess disturbed and potentially violent service users, and unlikely to have support of psychiatric trained nurses or access to their notes prior to assessment.

Features felt to be most important with agitated/potentially violent service users were space, access, layout, weapons, alarm and ease of exit.

Two studies together indicated a large disparity between features of ideal interviewing situation and those actually available.

Recommends safety features should be incorporated, and that violent incidents should be monitored and logged, reviewed and acted upon.

### Reviewer’s comments
- Numbers of staff surveyed were low (22) which, divided between three sites, provides a weak basis for generalising.
- Only three A&E staff responded.
Oster et al. (2001)  
Country: Canada  
Evidence level: 2-  

<table>
<thead>
<tr>
<th>Source</th>
<th>Design/methods</th>
<th>Aims of study</th>
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</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>History of violence. Psychiatric diagnosis. Score on the global assessment of functioning (GAF) scale. Diagnostic indicators of substance abuse.</td>
<td>Violence occurred in 758 (7.2%) of visits. Of these, 687 (90.6%) involved verbal aggression and 241 (31.8%) involved physical aggression. Violence was most strongly associated with a history of violence (risk ratio [RR] = 2.73, 95% confidence interval [CI] = 2.34-3.18), a diagnosis of schizophrenia or psychotic disorder not otherwise specified (RR = 1.91, 95% CI 1.62-2.26), and having a low score on the GAF scale (RR = 3.1, 95% CI = 2.59-3.71). The frequency of violence among female service users (6.6%) was similar to that among male service users (7.7%). Men were only slightly more likely than women to use physical aggression in violent incidents (34.5% and 28.8% respectively).</td>
</tr>
</tbody>
</table>

Reviewer’s comments  
- Findings suggest that history of violence, psychotic disorders and low GAF score are more clinically important predictors of violence than substance abuse, although this is also significantly associated with violence.  
- The quality of this study is good; sample size is large.
## Source

<table>
<thead>
<tr>
<th>Design/methods</th>
<th>Aims of study</th>
<th>Outcome measures</th>
<th>Results</th>
</tr>
</thead>
</table>
| Case study.    | To describe the use of ketamine to tranquilise a dangerous and violent service user on admission to the A&E department. | Sedation.  
Vital signs.  
Duration of sedation.  
Emergence phenomena. | Within two to three minutes of intramuscular administration of 480mg ketamine (5mg/kg), violent activity had completely ceased. 
Mild sinus tachycardia and transient hypertension were observed 10 minutes after initial sedation, but all vital signs were normal 50 minutes after ketamine administration. 
Ketamine effect dissipated within two hours, however additional aliquots of lorazepam were required to control agitation over the next 12 hours. 
No immediate complications from ketamine or emergence phenomena were observed. |

### Reviewer’s comments

- This is a case study of a single service user, so generalisability is severely limited.
- Given ketamine’s wide safety profile, potent anaesthetic effects, rapid onset, efficacious intramuscular administration, absence of respiratory depression and short duration of action, it is considered useful for immediate tranquillisation of selected undifferentiated uncontrollable adults who are in a life-threatening situation that requires immediate medical intervention.
- Concomitant use of benzodiazepines, and selected use of atropine, are suggested to ameliorate emergence phenomena and to dry excessive oral secretions.
- After use, close monitoring of cardiovascular parameters is essential.
### Appendix 6: EXCLUDED STUDIES

#### Environment

<table>
<thead>
<tr>
<th>Source</th>
<th>Reason for exclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allan (1988)</td>
<td>Study excluded on the basis of research design.</td>
</tr>
<tr>
<td>Caplan (1993)</td>
<td>Study excluded on the basis of research design. Although comparing two groups, the study does not meet the inclusion criteria for the present guideline (for example, before-and-after comparison, or comparison over multiple time intervals).</td>
</tr>
<tr>
<td>Delaney (1994)</td>
<td>Study excluded on basis of study design and population group.</td>
</tr>
<tr>
<td>Flannery (1997)</td>
<td>Study excluded on the basis of research design. Authors of study acknowledge methodological limitations of the study. Lack of generalisability of the findings.</td>
</tr>
<tr>
<td>Gray (1998)</td>
<td>The aims/outcomes of three of the studies included in the review are not compatible with the scope of the present guideline (for example, freedom for service users to leave the unit, rehabilitation outcomes). The one qualitative study included in the literature review is expected to be included in the ‘restraint/seclusion’ evidence review for the present guideline.</td>
</tr>
<tr>
<td>Hodges (1986)</td>
<td>Study not included because there were no reported outcomes that were directly related to violent or aggressive incidents. Otherwise very well designed and reported study.</td>
</tr>
<tr>
<td>Katz (1990)</td>
<td>Study excluded on the basis on study design.</td>
</tr>
<tr>
<td>Kumar (2001)</td>
<td>The methodological quality of this review is extremely poor. With the exception of the abstract, there is no information on how the searches were conducted, how the articles were reviewed or why the authors have included 32 references when they state that only six articles were reviewed. Authors state that only Medline was searched using the terms violence and crowding, which is insufficient searching criteria for this to be viewed as a report of any quality.</td>
</tr>
<tr>
<td>Lanza (1994)</td>
<td>Study excluded on the basis of research design. Although comparing two groups, the study does not meet the inclusion criteria for the present guideline (for example, before-and-after comparison or comparison over multiple time intervals).</td>
</tr>
<tr>
<td>Middelboe (2001)</td>
<td>Study excluded on basis of study design.</td>
</tr>
<tr>
<td>Omerov (1997)</td>
<td>Study excluded due to outcomes. Primarily concerned with evaluation of staff training programme in a new ward in comparison to rates of violence in previous ward. This study is expected to be included in the ‘training’ evidence review for the present guideline.</td>
</tr>
<tr>
<td>Rosenbaum (1991)</td>
<td>Study excluded on the basis of research design.</td>
</tr>
<tr>
<td>Snyder III (1994)</td>
<td>Study excluded on the basis of research design. Lack of generalisability of the findings.</td>
</tr>
<tr>
<td>Wilson (1992)</td>
<td>Study excluded on the basis of study design. No information provided on age of adolescents or indeed any other demographic variables.</td>
</tr>
</tbody>
</table>

#### Alarms

<table>
<thead>
<tr>
<th>Source</th>
<th>Reason for exclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Edworthy (1991)</td>
<td>Not directly relevant to topic (has implications for urgency sounds of alarms and need for alarms not too be so loud as to disrupt rational thought). Small sample size.</td>
</tr>
</tbody>
</table>
Violence: The Short-Term Management of Disturbed/Violent Behaviour in Psychiatric Inpatients and Emergency Departments

<table>
<thead>
<tr>
<th>Source</th>
<th>Reason for exclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jenkins (1998)</td>
<td>Not relevant to review question. Does not provide details/efficacy of alarm/security systems, only that several hospitals used them in A&amp;E.</td>
</tr>
<tr>
<td>Patterson (1982)</td>
<td>Not relevant to topic. Alarm systems are designed for immediate response in civil aircraft. Results not transferable.</td>
</tr>
</tbody>
</table>

Prediction: antecedents, warning signs and risk assessment

<table>
<thead>
<tr>
<th>Source</th>
<th>Reason for exclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buckley (1990)</td>
<td>Doesn't distinguish between violence in the community and institutional violence.</td>
</tr>
<tr>
<td>Cheung (1997b)</td>
<td>Study design (does not allow assessment of predictive validity of actuarial tools).</td>
</tr>
<tr>
<td>Lanza (1994)</td>
<td>Study design - case control study.</td>
</tr>
<tr>
<td>Morrison (1989)</td>
<td>Outcome measures not sufficiently isolated to allow conclusions.</td>
</tr>
<tr>
<td>Novaco (1997)</td>
<td>Does not look at anger as a predictor in the short-term, but only one to two-and-a-half years after admission, due to failing to collect data prior to this period.</td>
</tr>
<tr>
<td>Putchik &amp; van Praag (1990)</td>
<td>Study design (does not allow assessment of predictive validity of actuarial tools).</td>
</tr>
<tr>
<td>Smith (1994)</td>
<td>Validation study of NANDA (nurse diagnosis prediction tool).</td>
</tr>
<tr>
<td>Tardiff (1981)</td>
<td>An only study. Study design - used a retrospective survey method to consider correlations between risk factors and use of emergency control measures amongst psychiatric in-patients.</td>
</tr>
<tr>
<td>Werner (1984)</td>
<td>Different outcome measures are not sufficiently isolated to indicate the weight placed on each by clinicians when predicting short-term violence. This brings into question the author’s conclusion that the small correlation between actual violence and psychiatrists’ predictions may result from clinicians emphasising cues other than those that are most predictive of aggression.</td>
</tr>
</tbody>
</table>

Training

<table>
<thead>
<tr>
<th>Source</th>
<th>Reason for exclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Study</td>
<td>Reason for exclusion</td>
</tr>
<tr>
<td>----------------------------</td>
<td>-------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Forster (1999)</td>
<td>Number of participants not specified. No information on previous training of participants and whether the two group reacted differently to training. The analysis is unclear. Therefore, too many confounders to be useful.</td>
</tr>
<tr>
<td>Hurlebaus &amp; Link (1997)</td>
<td>This is a small study with no long-term follow-up. It is not clear if all the results are included in the analysis. The reporting of the results is unclear. It is not clear if this is a duplicate of a previous study (also excluded).</td>
</tr>
<tr>
<td>Hurlebaus (1994)</td>
<td>This was a very small before and after study and some of the results were not included in the analysis. No clear indication is given as to why these results are excluded from the analysis.</td>
</tr>
<tr>
<td>Kribel (1983)</td>
<td>There is not enough information provided to assess the validity of this study. Confounders are not mentioned; analysis is not shown; the methodology is not outlined; the number of participants is not specified.</td>
</tr>
<tr>
<td>Landau (1993)</td>
<td>This is a very small cross-sectional study within a PhD (PhDs are not in the inclusion criteria).</td>
</tr>
<tr>
<td>Foster (1996)</td>
<td>This study is not training specific and is already discussed in the staff perspectives review.</td>
</tr>
<tr>
<td>Schwarts (1999)</td>
<td>This US cross-sectional survey had an extremely low response rate (20 per cent). The target audit was not a randomised sample.</td>
</tr>
<tr>
<td>Sojostrom, 2001</td>
<td>Study results undermined by major organisational changes during study period. Other results are potentially affected by reporting bias. Some outcome measures are unclear.</td>
</tr>
</tbody>
</table>

### Staff and service user perspectives

(Studies that were specifically identified for this review)

<table>
<thead>
<tr>
<th>Study</th>
<th>Reason for exclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bhui, 2001</td>
<td>Method of sampling or selection not clearly stated - unclear as to whether patients were witnesses to violence or had been involved in violence. Methodology not rigorous and rationale lacking. Thematic content analysis is not clearly reported in results in clear defined themes. No evidence of reliability or validity. No evidence of confirmation of findings. No participant information.</td>
</tr>
</tbody>
</table>
### Violence: The Short-Term Management of Disturbed/Violent Behaviour in Psychiatric Inpatients and Emergency Departments

<table>
<thead>
<tr>
<th>Source</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Finnema (1994)</td>
<td>Quality poor. The study amalgamated results with some results - but not all - from a pilot study because of the content of the responses.</td>
</tr>
<tr>
<td>O’Connell (2000)</td>
<td>Did not include psychiatric inpatients or A&amp;E in survey – not to scope.</td>
</tr>
<tr>
<td>Poster (1996)</td>
<td>Although psychiatric nurses were involved in this survey, their responses are not differentiated from those of general nurses.</td>
</tr>
<tr>
<td>Rees (1996)</td>
<td>Most of the staff worked with elderly service users.</td>
</tr>
</tbody>
</table>

### Minority ethnic groups

<table>
<thead>
<tr>
<th>Source</th>
<th>Reason for exclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bond (1988)</td>
<td>Average age of participants was 15. Sample size of black service users n=9 and therefore too small.</td>
</tr>
<tr>
<td>Carpenter (1988)</td>
<td>Does not test for bias in treatment but by location.</td>
</tr>
<tr>
<td>Fabrega (1988)</td>
<td>Study design unclear.</td>
</tr>
<tr>
<td>Greenblatt &amp; Davis, 1992</td>
<td>Study design unclear.</td>
</tr>
<tr>
<td>Marx &amp; Levinson (1988)</td>
<td>Deals with US law and therefore does not extrapolate to the UK.</td>
</tr>
<tr>
<td>Singh (1997)</td>
<td>Study design unclear.</td>
</tr>
<tr>
<td>Wang &amp; Diamond (1999)</td>
<td>Ethnicity considered but does not examine bias.</td>
</tr>
</tbody>
</table>

### Gender

<table>
<thead>
<tr>
<th>Study</th>
<th>Reason for exclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barlow (1997)</td>
<td>Main focus on sexual harassment rather than physical violence, and not on the short-term management of violence.</td>
</tr>
<tr>
<td>Bjorkly (1999)</td>
<td>Physical assaults not reported separately by gender. Sample size very small, so power limited to detect sex differences in assaults.</td>
</tr>
<tr>
<td>DiNitto (2002)</td>
<td>This study does not report on short-term violence in an in-patient setting and so is outside the scope.</td>
</tr>
<tr>
<td>Elbogen (2001)</td>
<td>This study does not report on short-term violence in an in-patient setting and so is outside the scope.</td>
</tr>
<tr>
<td>Flannery (2001a)</td>
<td>Physical assaults not reported separately. The total numbers of male and female staff in inpatient settings not reported, so proportion of assaults relative to gender of staff not available. The study also reports on some settings that are outside the scope.</td>
</tr>
<tr>
<td>Flannery (2001b)</td>
<td>Physical assaults not reported separately. The total number of male and female staff in in-patient settings not reported, so proportion of assaults relative to gender of staff not available. The study also reports on some settings that are outside the scope. Number of assaults rather than number of service users recorded, making it unclear if one service user committed many assaults.</td>
</tr>
</tbody>
</table>
Violence: The Short-Term Management of Disturbed/Violent Behaviour in Psychiatric Inpatients and Emergency Departments

<table>
<thead>
<tr>
<th>Source</th>
<th>Reason for exclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gallop (1999a)</td>
<td>Does not address whether gender is an issue in the use of restraint.</td>
</tr>
<tr>
<td>Gallop (1999b)</td>
<td>This study does not report on short-term violence in an in-patient setting and so is outside the scope.</td>
</tr>
<tr>
<td>Goldmeier (1988)</td>
<td>This study does not report on short-term violence in an in-patient setting and so is outside the scope.</td>
</tr>
<tr>
<td>Linaker (2000)</td>
<td>It is unclear that the service users in this review were in-patients, it is also unclear whether they had carried out acts of violence.</td>
</tr>
<tr>
<td>Mason (1998)</td>
<td>This study does not report on short-term violence in an in-patient setting and so is outside the scope.</td>
</tr>
<tr>
<td>Smith (1997a)</td>
<td>This study does not address the question of whether violence was treated differently among men and women.</td>
</tr>
<tr>
<td>Smith (1997b)</td>
<td>This study does not address the question of whether violence was treated differently among men and women.</td>
</tr>
<tr>
<td>Üçok (1996)</td>
<td>This study does not show violence and self-harm separately. Underlying rates of incidents apart from seclusion are not reported, so that higher numbers of women secluded may reflect incidents of self-harm rather than violence.</td>
</tr>
</tbody>
</table>

De-escalation techniques

<table>
<thead>
<tr>
<th>Source</th>
<th>Reason for exclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neild-Anderson (1993)</td>
<td>Not on guideline population. Not a rigorous enough study to demonstrate generalisability. No indication of whether it was the training or staff support that brought about changes. Optional involvement in project.</td>
</tr>
</tbody>
</table>

Observation

<table>
<thead>
<tr>
<th>Source</th>
<th>Reason for exclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Davis (1997)</td>
<td>No clear structure to research. Results not systematically recorded. No selection criterion. No inclusion criterion. Mostly overview.</td>
</tr>
<tr>
<td>Dennis S (1998)</td>
<td>Results not relevant to topic (reports number of instances of constant observation (CO), reasons for use etc.). Limited reporting of results.</td>
</tr>
<tr>
<td>Goldberg (1989)</td>
<td>Does not examine CO in a psychiatric setting.</td>
</tr>
<tr>
<td>Lamdan (1996)</td>
<td>Does not address study population. No conclusions reached as to the usefulness of CO in the management of violence.</td>
</tr>
<tr>
<td>Langenbach (1999)</td>
<td>Study design - poor methodology. Does not discuss effectiveness of levels of observation.</td>
</tr>
</tbody>
</table>

Physical interventions and seclusion

<table>
<thead>
<tr>
<th>Source</th>
<th>Reason for exclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cashin (1996)</td>
<td>Sample size too small to indicate whether the results are significant.</td>
</tr>
</tbody>
</table>
Violence: The Short-Term Management of Disturbed/Violent Behaviour in Psychiatric Inpatients and Emergency Departments

<table>
<thead>
<tr>
<th>Source</th>
<th>Reason for exclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lehane &amp; Rees (1996)</td>
<td>Study design. Post measurements of impact of seclusion taken four years after seclusion removed; details from another previous study utilised as before measurements. Many other factors could have been involved during the four-year period and were not addressed at all.</td>
</tr>
<tr>
<td>Morrison &amp; Lehane (1995)</td>
<td>Study design unclear. No service user information given such as gender, or staff experience.</td>
</tr>
<tr>
<td>Parkes (1996)</td>
<td>Overall study design weak and information insufficient. Doesn’t specify training techniques. Gives no demography of service users. Patient population and number of incidents vary in each year. Problem with matching of pre and post groups; matching criteria not stated. Does not rate seriousness of attacks pre and post for comparison. Does not rate service user or staff satisfaction; summary of staff expressing view not given; no examples given.</td>
</tr>
<tr>
<td>Bell (1992)</td>
<td>75 per cent of cases involved alcohol, none were physically restrained. All were found in positions that occluded their airway. Two cases were elderly in vest restraints, who had struggled in their wheelchairs and had fallen over. Therefore not involving excited delirium and principally forced restraint.</td>
</tr>
<tr>
<td>Uecok (1996)</td>
<td>Lacks detail on methodology, for example, randomisation and selection processes. Lacks detail on questionnaire. Methods of seclusion include straitjacket and fixing to bed; generalisability of this study a problem. Weak study design with insufficient information.</td>
</tr>
</tbody>
</table>

Rapid tranquillisation

<table>
<thead>
<tr>
<th>Source</th>
<th>Reason for exclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bick &amp; Hannah (1986)</td>
<td>Study design.</td>
</tr>
<tr>
<td>Bobon (1968)</td>
<td>Not RCT - examined droperidol for agitation (French).</td>
</tr>
<tr>
<td>Carter (1978)</td>
<td>Outside scope - discusses use of oral haloperidol following rapid tranquillisation.</td>
</tr>
<tr>
<td>Coutinho (2000)</td>
<td>This systematic review replicates the included Cochrane review, but is older. All the same studies are included and three of the authors are the same.</td>
</tr>
<tr>
<td>Fann &amp; Linton (1972)</td>
<td>Not RCT - case study of use of perphenazine for rapid tranquillisation.</td>
</tr>
</tbody>
</table>
Franco (1994) Discusses use of token economy to manage aggression, but does not give enough details to evaluate (staff/service user ratio, figures for reduction of violence, diagnoses etc.).

Hayworth (1973) Not RCT - examined use of thioridazine for rapid tranquillisation.

Jost von & Znorski (1973) RCT of mesoridazin for treatment resistant psychosis (Swiss-German).


Lee (1992) Study design.

Leger (1971) Not RCT - examined lithium carbonate, haloperidol and IB-503 for manic depressive psychosis (manic phase) - (Russian).


Man & Chen (1973) Not RCT - cohort study examining the use of haloperidol and chlorpromazine for rapid tranquillisation.


Mouren (1976) Not RCT - examined sultopride for agitation (French).


Penochet (1979) Not RCT - examined sultopride for agitation (French).


Piyakulmala (1977) Not rapid tranquillisation - pimozide for acutely agitated schizophrenia.


Resnick & Burton (1984) RCT comparing droperidol and haloperidol (droperidol is no longer recommended for rapid tranquillisation in the UK).

Salzman (1991) Study design - it is not clear that this is an RCT although Broadstock included as one.


Stotsky (1977) Not RCT - double-blind cohort study to compare haloperidol and thiothixene for rapid tranquillisation.

Swett (1985) Not rapid tranquillisation. Study population not to scope.

Tardiff (1983) Survey of drugs used for rapid tranquillisation in US - now out of date.


### Accident and emergency settings

<table>
<thead>
<tr>
<th>Source</th>
<th>Reason for exclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allen (2000)</td>
<td>Not specific to A&amp;E.</td>
</tr>
<tr>
<td>Author</td>
<td>Comment</td>
</tr>
<tr>
<td>-----------------</td>
<td>----------------------------------------------</td>
</tr>
<tr>
<td>Rankins (1999)</td>
<td>Excluded attacks by psychiatric service users in A&amp;E.</td>
</tr>
</tbody>
</table>
Appendix 7:

Prediction – ineligible studies

The following papers were ordered on the basis of sifts, but were then excluded, as they did not fulfil the eligibility criteria to be put forward for the evidence review. Examples for exclusion were principally based upon: settings – community; long-term not short-term violence; subjects - not psychiatric in-patients or were elderly; and papers were reviews or not on the topic.


### Appendix 8: META-ANALYSIS - RAPID TRANQUILLISATION

Reproduced from the National Collaborating Centre for Mental Health (2002) Schizophrenia: Core Interventions in the Treatment and Management of Schizophrenia in Primary and Secondary Care, Clinical Guideline

<table>
<thead>
<tr>
<th>Study or sub-category</th>
<th>Treatment</th>
<th>Control</th>
<th>OR (fixed) 95% CI</th>
<th>Weight %</th>
<th>OR (fixed) 95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>01 dizziness</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Venlafaxine</td>
<td>0/121</td>
<td>2/126</td>
<td></td>
<td>100.00</td>
<td>0.05 (0.02, 0.22)</td>
</tr>
<tr>
<td>Subtotal (95% CI)</td>
<td>121</td>
<td>126</td>
<td></td>
<td>100.00</td>
<td>0.05 (0.02, 0.22)</td>
</tr>
<tr>
<td>Total events: 0 (Treatment), 9 (Control)</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Test for heterogeneity not applicable</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Test for overall effect Z = 2.10 (P = 0.04)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>02 EPS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Venlafaxine</td>
<td>1/121</td>
<td>7/126</td>
<td></td>
<td>100.00</td>
<td>0.13 (0.02, 1.08)</td>
</tr>
<tr>
<td>Subtotal (95% CI)</td>
<td>121</td>
<td>126</td>
<td></td>
<td>100.00</td>
<td>0.13 (0.02, 1.08)</td>
</tr>
<tr>
<td>Total events: 1 (Treatment), 7 (Control)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Test for heterogeneity not applicable</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Test for overall effect Z = 1.99 (P = 0.05)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>03 received anticholinergics</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Breja 2002</td>
<td>1/185</td>
<td>3/40</td>
<td>16.25</td>
<td>0.07 (0.01, 0.65)</td>
<td></td>
</tr>
<tr>
<td>Venlafaxine</td>
<td>6/131</td>
<td>26/136</td>
<td></td>
<td>0.19 (0.07, 0.49)</td>
<td></td>
</tr>
<tr>
<td>Subtotal (95% CI)</td>
<td>186</td>
<td>146</td>
<td></td>
<td>0.17 (0.07, 0.49)</td>
<td></td>
</tr>
<tr>
<td>Total events: 7 (Treatment), 29 (Control)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Test for heterogeneity (CMH = 0.65, df = 1, P = 0.42), IP = 0%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Test for overall effect Z = 0.68 (P &lt; 0.0001)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>04 hypotension</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Breja 2002</td>
<td>7/135</td>
<td>0/40</td>
<td>100.00</td>
<td>0.40 (0.29, 0.62)</td>
<td></td>
</tr>
<tr>
<td>Venlafaxine</td>
<td>125</td>
<td>40</td>
<td></td>
<td>100.00</td>
<td>0.40 (0.29, 0.62)</td>
</tr>
<tr>
<td>Subtotal (95% CI)</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Total events: 7 (Treatment), 0 (Control)</td>
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<td></td>
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<tr>
<td>Test for heterogeneity not applicable</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Test for overall effect Z = 0.09 (P = 0.41)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>05 akinesia</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Breja 2002</td>
<td>16/186</td>
<td>5/49</td>
<td>100.00</td>
<td>0.66 (0.22, 1.23)</td>
<td></td>
</tr>
<tr>
<td>Venlafaxine</td>
<td>186</td>
<td>40</td>
<td></td>
<td>100.00</td>
<td>0.66 (0.23, 1.98)</td>
</tr>
<tr>
<td>Subtotal (95% CI)</td>
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<td>Total events: 16 (Treatment), 5 (Control)</td>
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<tr>
<td>Test for heterogeneity not applicable</td>
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<tr>
<td>Test for overall effect Z = 0.75 (P = 0.45)</td>
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<tr>
<td>06 akathisia</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Breja 2002</td>
<td>46/186</td>
<td>10/40</td>
<td>100.00</td>
<td>0.94 (0.42, 2.07)</td>
<td></td>
</tr>
<tr>
<td>Venlafaxine</td>
<td>186</td>
<td>40</td>
<td></td>
<td>100.00</td>
<td>0.94 (0.42, 2.07)</td>
</tr>
<tr>
<td>Subtotal (95% CI)</td>
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<td></td>
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</tr>
<tr>
<td>Total events: 46 (Treatment), 10 (Control)</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Test for heterogeneity not applicable</td>
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</tr>
<tr>
<td>Test for overall effect Z = 1.16 (P = 0.07)</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>07 clinically significant GTCs</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Breja 2002</td>
<td>25/186</td>
<td>10/40</td>
<td>100.00</td>
<td>0.47 (0.20, 1.09)</td>
<td></td>
</tr>
<tr>
<td>Venlafaxine</td>
<td>186</td>
<td>40</td>
<td></td>
<td>100.00</td>
<td>0.47 (0.20, 1.09)</td>
</tr>
<tr>
<td>Subtotal (95% CI)</td>
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</tr>
<tr>
<td>Total events: 25 (Treatment), 10 (Control)</td>
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<tr>
<td>Test for heterogeneity not applicable</td>
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</tr>
<tr>
<td>Test for overall effect Z = 1.79 (P = 0.07)</td>
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</tr>
<tr>
<td>Study or sub-category</td>
<td>Treatment</td>
<td>Control</td>
<td>WMD (fixed)</td>
<td>Weight</td>
<td>95% CI</td>
</tr>
<tr>
<td>----------------------</td>
<td>-----------</td>
<td>---------</td>
<td>-------------</td>
<td>--------</td>
<td>--------</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>N</td>
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</tr>
<tr>
<td></td>
<td>Mean (SD)</td>
<td>Mean (SD)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>01 at 2 hours</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Breier 2002</td>
<td>46</td>
<td>40</td>
<td>-9.40 (4.90)</td>
<td>25.74</td>
<td>-1.90 [-4.21, 0.41]</td>
</tr>
<tr>
<td>Wright 2001</td>
<td>131</td>
<td>125</td>
<td>-7.79 (6.10)</td>
<td>74.25</td>
<td>-0.10 [-1.46, 1.26]</td>
</tr>
<tr>
<td>Subtotal (65%) CI</td>
<td>177</td>
<td>165</td>
<td></td>
<td>100.00</td>
<td>-0.86 [-1.74, 0.01]</td>
</tr>
</tbody>
</table>

Chi² = 1.73, df = 1 (P = 0.19), I² = 42.1%
Test for heterogeneity: Z = 0.94 (P = 0.35)

<table>
<thead>
<tr>
<th></th>
<th>Weight</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>02 at 24 hours</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Breier 2002</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wright 2001</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subtotal (65%) CI</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Chi² = 1.87, df = 1 (P = 0.17), I² = 46.5%
Test for heterogeneity: Z = 0.47 (P = 0.64)
### Review: Antipsychotics - Rapid Taper
### Comparison: 11 NI Clonazepam (10 mg) vs IM Haloperidol (7.5 mg)
### Outcome: AGitated Behaviour Scale change score

<table>
<thead>
<tr>
<th>Study or sub-category</th>
<th>N</th>
<th>Treatment Mean (SD)</th>
<th>Control Mean (SD)</th>
<th>WMD (fixed)</th>
<th>Weight %</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>01 at 2 hours</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Breier 2002</td>
<td>46</td>
<td>-10.40 (6.70)</td>
<td>39</td>
<td>-7.70 (5.20)</td>
<td>0.40</td>
<td>-2.70 [-5.02, -0.38]</td>
</tr>
<tr>
<td>Wright 2001</td>
<td>131</td>
<td>-6.30 (0.50)</td>
<td>125</td>
<td>-3.20 (0.60)</td>
<td>99.60</td>
<td>-0.30 [-0.25, -0.05]</td>
</tr>
<tr>
<td>Subtotal (95% CI)</td>
<td>177</td>
<td></td>
<td>164</td>
<td></td>
<td>100.00</td>
<td>-0.11 [-0.26, 0.04]</td>
</tr>
<tr>
<td>Test for heterogeneity: Chi² = 4.01, df = 1 (P = 0.05), I² = 78.2%</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Test for overall effect: Z = 1.48 (P = 0.14)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| **02 at 24 hours**    |    |                     |                   |             |          |                |
| Breier 2002           | 46 | -7.40 (7.00)        | 49                | -5.00 (4.10) | 24.75    | -2.60 [-4.79, -0.01] |
| Wright 2001           | 131| -6.40 (5.90)        | 126               | -4.60 (5.20) | 76.25    | 0.20 [-1.17, 1.57] |
| Subtotal (95% CI)     | 177|                     | 165               |             | 100.00   | -0.44 [-1.63, 0.74] |
| Test for heterogeneity: Chi² = 3.42, df = 1 (P = 0.06), I² = 70.8% |
| Test for overall effect: Z = 0.73 (P = 0.40) |
### Table: Agitation Calmness Evaluation scale change score

<table>
<thead>
<tr>
<th>Study or sub-category</th>
<th>Treatment</th>
<th>Control</th>
<th>WMD (fixed)</th>
<th>Weight</th>
<th>%</th>
<th>95% CI</th>
<th>WMD (fixed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>01 at 2 hours</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Breier 2002</td>
<td>46</td>
<td>-2.63 (1.70)</td>
<td>40</td>
<td>-1.80 (1.60)</td>
<td>0.12</td>
<td>-0.80 [-1.50, -0.10]</td>
<td></td>
</tr>
<tr>
<td>Wright 2001</td>
<td>131</td>
<td>-1.60 (0.10)</td>
<td>126</td>
<td>-1.50 (0.10)</td>
<td>99.00</td>
<td>-0.10 [-0.12, -0.08]</td>
<td></td>
</tr>
<tr>
<td>Subtotal (95% CI)</td>
<td>177</td>
<td>166</td>
<td></td>
<td>100.00</td>
<td>-0.10 [-0.12, -0.08]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Test for heterogeneity: Chi² = 3.66, df = 1 (P = 0.05), I² = 74.1%</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Test for overall effect: Z = 8.99 (P &lt; 0.00001)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| 02 at 24 hours        |           |         |             |        |   |        |             |
| Dreier 2002           | 46        | -0.90 (0.90) | 40  | -0.80 (0.70) | 34.27 | -0.10 [-0.44, 0.24] |
| Wright 2001           | 131       | -0.90 (1.00) | 126 | -1.10 (1.00) | 65.73 | 0.20 [0.06, 0.34] |
| Subtotal (95% CI)     | 177       | 166     |             | 100.00 | 0.16 [-0.04, 0.36] |
| Test for heterogeneity: Chi² = 3.52, df = 1 (P = 0.06), I² = 71.8% |
| Test for overall effect: Z = 1.91 (P = 0.11) |
### Antipsychotics - Rapid Tranx

**Comparison:** IM Clonazepam (10 mg) vs IM Haloperidol (7.5 mg)

**Outcome:** No clinical response

<table>
<thead>
<tr>
<th>Study or sub-category</th>
<th>Treatment</th>
<th>Control</th>
<th>OR (fixed)</th>
<th>Weight</th>
<th>OR (fixed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight 2001</td>
<td>35/131</td>
<td>39/126</td>
<td></td>
<td>100.00</td>
<td>0.91 [0.47, 1.40]</td>
</tr>
<tr>
<td>Total (95% CI)</td>
<td>131</td>
<td>126</td>
<td></td>
<td>100.00</td>
<td>0.81 [0.47, 1.40]</td>
</tr>
</tbody>
</table>

- Total events: 35 (Treatment), 39 (Control)
- Test for heterogeneity: not applicable
- Test for overall effect: Z = 0.75 (P = 0.45)
### Antipsychotics - Rapid Tranq

**Comparison:** IM Olanzapine (10 mg) vs IM Haloperidol (7.5 mg)

**Outcome:** Received benzodiazepines

<table>
<thead>
<tr>
<th>Study or sub-category</th>
<th>Treatment n/N</th>
<th>Control n/N</th>
<th>OR (fixed) 95% CI</th>
<th>Weight %</th>
<th>OR (fixed) 95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breier 2002</td>
<td>4/46</td>
<td>0/40</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wright 2001</td>
<td>21/131</td>
<td>25/126</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total (95% CI)</strong></td>
<td><strong>177</strong></td>
<td><strong>166</strong></td>
<td></td>
<td><strong>100.00</strong></td>
<td><strong>0.94 [0.82, 1.72]</strong></td>
</tr>
</tbody>
</table>

**Total events:** 25 (Treatment), 25 (Control)

- Test for heterogeneity: CHI² = 2.53, df = 1 (P = 0.11), I² = 60.4%
- Test for overall effect: Z = 0.10 (P = 0.85)
### Antipsychotics - Rapid Trang

**Comparison:** IM Clonazepam (10 mg) vs IM Haloperidol (7.5 mg)

**Outcome:** 07 BP-RS total change score

<table>
<thead>
<tr>
<th>Study or sub-category</th>
<th>Treatment N</th>
<th>N</th>
<th>Control Mean (SD)</th>
<th>N</th>
<th>Treatment Mean (SD)</th>
<th>Weight %</th>
<th>MARD (fixed) 95% CI</th>
<th>Weight %</th>
<th>MARD (fixed) 95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>01 at 2 hours</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Innes 2002</td>
<td>46</td>
<td>39</td>
<td>-9.20 (7.20)</td>
<td>39</td>
<td>12.00 (5.90)</td>
<td>100.00</td>
<td>-2.80 [-5.63, 0.03]</td>
<td>100.00</td>
<td>-2.80 [-5.63, 0.03]</td>
</tr>
<tr>
<td>Subtotal (95% CI)</td>
<td>46</td>
<td>39</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Test for heterogeneity: not applicable</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Test for overall effect: Z = 1.94 (P = 0.05)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| 02 at 24 hours        |             |   |                   |   |                     |          |                     |          |                     |
| Innes 2002            | 46          | 40 | -7.30 (7.50)      | 40 | -9.00 (7.70)        | 100.00   | -1.70 [-4.52, 1.52] | 100.00   | -1.70 [-4.52, 1.52] |
| Subtotal (95% CI)     | 46          | 40 |                   |   |                     |          |                     |          |                     |
| Test for heterogeneity: not applicable |
| Test for overall effect: Z = 1.94 (P = 0.05) |

- Favours treatment
- Favours control
### Study or sub-category

<table>
<thead>
<tr>
<th></th>
<th>Treatment</th>
<th>Control</th>
<th>WMD (fixed)</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean (SD)</td>
<td>Mean (SD)</td>
<td>95% CI</td>
<td>%</td>
</tr>
<tr>
<td>01 at 2 hours</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enner 2002</td>
<td>-1.90 (2.30)</td>
<td>-1.40 (2.20)</td>
<td>-0.50 [-1.46, 0.46]</td>
<td>100.00</td>
</tr>
<tr>
<td>Subtotal (50% CI)</td>
<td>-1.90 (2.30)</td>
<td>-1.40 (2.20)</td>
<td>-0.50 [-1.46, 0.46]</td>
<td>100.00</td>
</tr>
<tr>
<td>Test for heterogeneity: not applicable</td>
<td>Test for overall effect: Z = 1.32 (P = 0.01)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>02 at 24 hours</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enner 2002</td>
<td>-1.70 (2.40)</td>
<td>-1.80 (3.00)</td>
<td>0.10 [-1.06, 1.26]</td>
<td>100.00</td>
</tr>
<tr>
<td>Subtotal (50% CI)</td>
<td>-1.70 (2.40)</td>
<td>-1.80 (3.00)</td>
<td>0.10 [-1.06, 1.26]</td>
<td>100.00</td>
</tr>
<tr>
<td>Test for heterogeneity: not applicable</td>
<td>Test for overall effect: Z = 0.17 (P = 0.07)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Antipsychotics - Rapid Tram:**
- **Outcome:** DBPRES positive symptom change score
Review:   Antipsychotics - Rapid Tranq  
Comparison:  D1 IM Chlorzapine (10 mg) vs IM Haloperidol (7.5 mg)  
Outcome:   CGI severity change score

<table>
<thead>
<tr>
<th>Study or sub-category</th>
<th>N</th>
<th>Treatment Mean (SD)</th>
<th>Control Mean (SD)</th>
<th>WMD (fixed)</th>
<th>Weight %</th>
<th>WMD (fixed) 95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>01 at 24 hours</td>
<td>46</td>
<td>-0.40 (0.60)</td>
<td>40</td>
<td>-0.60 (0.60)</td>
<td>100.00</td>
<td>0.00 [-0.24, 0.24]</td>
</tr>
<tr>
<td>Subtotal (95% CI)</td>
<td>46</td>
<td>4.0</td>
<td>100.00</td>
<td>0.00 [-0.24, 0.24]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Test for heterogeneity: not applicable</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Test for overall effect: Z = 0.30 (P = 1.00)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total (95% CI)</td>
<td>46</td>
<td>4.0</td>
<td>100.00</td>
<td>0.00 [-0.24, 0.24]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Test for heterogeneity: not applicable</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Test for overall effect: Z = 0.30 (P = 1.00)</td>
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</tbody>
</table>
### Antipsychotics - Rapid Tranx

**Comparison:** IM Chlorpromazine (10 mg) vs IM Haloperidol (7.5 mg)

**Outcome:** 11 Side effects: 2 Continuous

<table>
<thead>
<tr>
<th>Study or sub-category</th>
<th>N</th>
<th>Treatment Mean (SD)</th>
<th>N</th>
<th>Control Mean (SD)</th>
<th>WMD (Fixed)</th>
<th>Weight %</th>
<th>95% CI</th>
<th>WMD (Fixed)</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>QTc interval change (msec): at 24 hours</td>
<td>46</td>
<td>-1.90 (31.00)</td>
<td>40</td>
<td>5.50 (24.70)</td>
<td>-8.40 [-20.18, 3.38]</td>
<td>18.47</td>
<td>-8.40 [-20.18, 3.38]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wight 2001</td>
<td>121</td>
<td>-2.00 (11.30)</td>
<td>125</td>
<td>-1.20 (24.40)</td>
<td>-8.40 [-20.18, 3.38]</td>
<td>91.50</td>
<td>-8.40 [-20.18, 3.38]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subtotal (95% CI)</td>
<td>177</td>
<td>-1.90 (31.00)</td>
<td>166</td>
<td>-1.20 (24.40)</td>
<td>-8.40 [-20.18, 3.38]</td>
<td>100.00</td>
<td>-8.40 [-20.18, 3.38]</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Test for heterogeneity: Chi^2 = 9.88, df = 1 (P = 0.03), I^2 = 6%

Test for overall effect: Z = 1.17 (P = 0.24)
### Violence: The Short-Term Management of Disturbed/ Violent Behaviour in Psychiatric In-patient and Emergency Departments Guideline

#### Review: Antipsychotics - Rapid Tranx

#### Comparison: 01 IM Clonazapine (10 mg) vs IM Haloperidol (7.5 mg)

#### Outcome: 12 Side effects: 1. Dystonia

<table>
<thead>
<tr>
<th>Study or sub-category</th>
<th>Treatment n/N</th>
<th>Control n/N</th>
<th>RR (fixed) 95% CI</th>
<th>Weight %</th>
<th>PR (fixed) 95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>01 dystonia</td>
<td>0/131</td>
<td>9/126</td>
<td>0.05 [0.00, 0.86]</td>
<td>100.00</td>
<td></td>
</tr>
<tr>
<td>Subtotal (95% CI)</td>
<td>131</td>
<td>126</td>
<td></td>
<td>100.00</td>
<td>0.05 [0.00, 0.86]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>02 EPS</td>
<td>1/131</td>
<td>7/126</td>
<td>0.14 [0.02, 1.10]</td>
<td>100.00</td>
<td></td>
</tr>
<tr>
<td>Subtotal (95% CI)</td>
<td>131</td>
<td>126</td>
<td></td>
<td>100.00</td>
<td>0.14 [0.02, 1.10]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>03 received anticholinergics</td>
<td>6/131</td>
<td>25/126</td>
<td>0.22 [0.09, 0.52]</td>
<td>100.00</td>
<td></td>
</tr>
<tr>
<td>Subtotal (95% CI)</td>
<td>131</td>
<td>126</td>
<td></td>
<td>100.00</td>
<td>0.22 [0.09, 0.52]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>07 clinically significant QTc interval</td>
<td>11/48</td>
<td>10/40</td>
<td>0.46 [0.45, 2.01]</td>
<td>100.00</td>
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</tr>
<tr>
<td>Subtotal (95% CI)</td>
<td>48</td>
<td>40</td>
<td></td>
<td>100.00</td>
<td>0.46 [0.45, 2.01]</td>
</tr>
</tbody>
</table>

- Test for heterogeneity: not applicable
- Test for overall effect: Z = 2.06 (P = 0.04)
- Z = 1.87 (P = 0.06)
- Z = 3.46 (P = 0.0005)
- Z = 0.12 (P = 0.91)

<table>
<thead>
<tr>
<th>Study</th>
<th>Clotiapine n/N</th>
<th>Control n/N</th>
<th>Relative Risk (Random) 95% CI</th>
<th>Weight (%)</th>
<th>Relative Risk (Random) 95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Itoh 1968</td>
<td>2/2</td>
<td>1/2</td>
<td></td>
<td>35.7</td>
<td>2.00 [0.50, 8.00 ]</td>
</tr>
<tr>
<td>Jacobsson 1974</td>
<td>7/23</td>
<td>9/26</td>
<td></td>
<td>48.3</td>
<td>0.88 [0.39, 1.98 ]</td>
</tr>
<tr>
<td>Perales 1974</td>
<td>0/15</td>
<td>5/15</td>
<td></td>
<td>15.9</td>
<td>0.09 [0.01, 1.51 ]</td>
</tr>
</tbody>
</table>
**Review:** Clotiapine for acute psychotic illnesses

**Comparison:** 01 CLOTIAPINE versus STANDARD MEDICATION - OTHER ANTIPSYCHOTICS

**Outcome:** 02 Hospital and service outcome: Not well enough to be discharged

<table>
<thead>
<tr>
<th>Study</th>
<th>Clotiapine n/N</th>
<th>Control n/N</th>
<th>Relative Risk (Random) 95% CI</th>
<th>Weight (%)</th>
<th>Relative Risk (Random) 95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jacobsson 1974</td>
<td>23/23</td>
<td>25/26</td>
<td></td>
<td>100.0</td>
<td>1.04 [0.96, 1.12]</td>
</tr>
</tbody>
</table>

Total (95% CI)

Test for heterogeneity chi-square=0.00 df=0
Test for overall effect=1.00 p=0.3

---

- Favours treatment
- Favours control
Review: Clozapine for acute psychotic illnesses
Comparison: 01 CLOTIAPINE versus STANDARD MEDICATION - OTHER ANTIPLATFORMICS
Outcome: 03 Leaving the study early

<table>
<thead>
<tr>
<th>Study</th>
<th>Clozapine n/N</th>
<th>Control n/N</th>
<th>Relative Risk (Random) 95% CI</th>
<th>Weight (%)</th>
<th>Relative Risk (Random) 95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>01 any reason</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jacobsson 1974</td>
<td>6 / 23</td>
<td>5 / 26</td>
<td></td>
<td>73.0</td>
<td>1.36 [0.48, 3.86]</td>
</tr>
<tr>
<td>x Perales 1974</td>
<td>0 / 15</td>
<td>0 / 15</td>
<td></td>
<td>0.0</td>
<td>Not estimable</td>
</tr>
<tr>
<td>Uys 1996</td>
<td>4 / 21</td>
<td>0 / 21</td>
<td></td>
<td>27.0</td>
<td>9.00 [0.51, 157.38]</td>
</tr>
<tr>
<td>Subtotal (95% CI)</td>
<td>10 / 59</td>
<td>5 / 62</td>
<td></td>
<td>100.0</td>
<td>2.26 [0.40, 12.88]</td>
</tr>
<tr>
<td>Test for heterogeneity chi-square=1.66 df=1 p=0.1978 Test for overall effect=0.92 p=0.4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| 02 adverse effects |               |             |                               |            |                               |
| Jacobsson 1974     | 2 / 23        | 0 / 26      |                               | 100.0      | 5.83 [0.28, 111.43]           |
| x Perales 1974     | 0 / 15        | 0 / 15      |                               | 0.0        | Not estimable                 |
| x Uys 1996         | 0 / 21        | 0 / 21      |                               | 0.0        | Not estimable                 |
| Subtotal (95% CI)  | 2 / 50        | 0 / 62      |                               | 100.0      | 5.83 [0.28, 111.43]           |
| Test for heterogeneity chi-square=0.00 df=0 Test for overall effect=1.13 p=0.3 |

Favours treatment Favours control

Page 15 of 34
Review: Clotiapine for acute psychotic illnesses
Comparison: 01 CLOTIAPINE versus STANDARD MEDICATION - OTHER ANTI PSYCHOTICS
Outcome: 04 Adverse effects: 1. Movement disorders - use of antiparkinsonian medication

<table>
<thead>
<tr>
<th>Study</th>
<th>Clotiapine n/N</th>
<th>Control n/N</th>
<th>Relative Risk (Random) 95% CI</th>
<th>Weight (%)</th>
<th>Relative Risk (Random) 95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jacobsson 1974</td>
<td>13 / 23</td>
<td>16 / 26</td>
<td>0.92 [0.57, 1.47]</td>
<td>57.9</td>
<td></td>
</tr>
<tr>
<td>Uys 1996</td>
<td>1 / 21</td>
<td>9 / 21</td>
<td>0.11 [0.02, 0.80]</td>
<td>42.1</td>
<td></td>
</tr>
</tbody>
</table>
### Clotiapine for acute psychotic illnesses

**Comparison:** Clotiapine versus Standard Medication - Other Antipsychotics

**Outcome:** Advance effects; Incidence of specific side-effects

<table>
<thead>
<tr>
<th>Study</th>
<th>Clotiapine n/N</th>
<th>Control n/N</th>
<th>Relative Risk (Random)</th>
<th>Weight (%)</th>
<th>Relative Risk (Random)</th>
</tr>
</thead>
<tbody>
<tr>
<td>00 dry mouth</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Uys 1986</td>
<td>2/21</td>
<td>5/21</td>
<td>4</td>
<td>100.0</td>
<td>0.40 [0.09, 1.84]</td>
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<tr>
<td>Subtotal (95% CI)</td>
<td>2/21</td>
<td>5/21</td>
<td></td>
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<td>0.40 [0.09, 1.84]</td>
</tr>
<tr>
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<tr>
<td>Test for overall effect = 1.18 p = 0.2</td>
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</tr>
<tr>
<td>02 headache</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Perales 1974</td>
<td>11/15</td>
<td>0/15</td>
<td></td>
<td>100.0</td>
<td>1.63 [0.92, 2.96]</td>
</tr>
<tr>
<td>Subtotal (95% CI)</td>
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<td>0/15</td>
<td></td>
<td>100.0</td>
<td>1.63 [0.92, 2.96]</td>
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<tr>
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</tr>
<tr>
<td>03 insomnia</td>
<td></td>
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</tr>
<tr>
<td>Perales 1974</td>
<td>13/15</td>
<td>11/15</td>
<td></td>
<td>100.0</td>
<td>1.18 [0.82, 1.70]</td>
</tr>
<tr>
<td>Subtotal (95% CI)</td>
<td>13/15</td>
<td>11/15</td>
<td></td>
<td>100.0</td>
<td>1.18 [0.82, 1.70]</td>
</tr>
<tr>
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</tr>
<tr>
<td>Test for overall effect = 0.90 p = 0.4</td>
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<tr>
<td>04 pain at site of injection</td>
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<td></td>
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</tr>
<tr>
<td>Uys 1986</td>
<td>2/21</td>
<td>0/21</td>
<td></td>
<td>100.0</td>
<td>5.40 [0.25, 108.28]</td>
</tr>
<tr>
<td>Subtotal (95% CI)</td>
<td>2/21</td>
<td>0/21</td>
<td></td>
<td>100.0</td>
<td>5.40 [0.25, 108.28]</td>
</tr>
<tr>
<td>Test for heterogeneity chi-square = 0.00 df = 0</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Test for overall effect = 1.00 p = 0.3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>05 palpitations</td>
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<td></td>
</tr>
<tr>
<td>Uys 1986</td>
<td>2/21</td>
<td>4/21</td>
<td></td>
<td>100.0</td>
<td>0.40 [0.10, 2.44]</td>
</tr>
<tr>
<td>Subtotal (95% CI)</td>
<td>2/21</td>
<td>4/21</td>
<td></td>
<td>100.0</td>
<td>0.40 [0.10, 2.44]</td>
</tr>
<tr>
<td>Test for heterogeneity chi-square = 0.00 df = 0</td>
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<td></td>
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<tr>
<td>Test for overall effect = 0.86 p = 0.4</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>06 rash</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jacobson 1974</td>
<td>2/23</td>
<td>0/26</td>
<td></td>
<td>100.0</td>
<td>6.13 [0.29, 111.43]</td>
</tr>
<tr>
<td>Subtotal (95% CI)</td>
<td>2/23</td>
<td>0/26</td>
<td></td>
<td>100.0</td>
<td>6.13 [0.29, 111.43]</td>
</tr>
<tr>
<td>Test for heterogeneity chi-square = 0.00 df = 0</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Test for overall effect = 1.13 p = 0.3</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>07 seizure</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Uys 1986</td>
<td>1/21</td>
<td>0/21</td>
<td></td>
<td>100.0</td>
<td>3.80 [0.13, 59.70]</td>
</tr>
<tr>
<td>Subtotal (95% CI)</td>
<td>1/21</td>
<td>0/21</td>
<td></td>
<td>100.0</td>
<td>3.80 [0.13, 59.70]</td>
</tr>
</tbody>
</table>
Review: Clotiapine for acute psychotic illnesses  
Comparison: 02 CLOTIAPINE versus STANDARD MEDICATION - BENZODIAZEPINES  
Outcome: 01 Mental state: No significant improvement

<table>
<thead>
<tr>
<th>Study</th>
<th>Treatment N</th>
<th>Mean (SD)</th>
<th>Control N</th>
<th>Mean (SD)</th>
<th>Weighted Mean Difference (Fixed) 95% CI</th>
<th>Weight (%)</th>
<th>Weighted Mean Difference (Fixed) 95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>01 three days after beginning of treatment</td>
<td>30</td>
<td>20.07 (0.71)</td>
<td>30</td>
<td>23.43 (0.93)</td>
<td>100.0</td>
<td>-3.36 [-8.09, 1.37]</td>
<td></td>
</tr>
<tr>
<td>Subtotal (95% CI)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>100.0</td>
<td>-3.36 [-8.09, 1.37]</td>
</tr>
<tr>
<td>Test for heterogeneity chi-square=0.00 df=0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>100.0</td>
<td>-3.36 [-8.09, 1.37]</td>
</tr>
<tr>
<td>Test for overall effect=1.39 p=0.10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>100.0</td>
<td>-3.36 [-8.09, 1.37]</td>
</tr>
<tr>
<td>Total (95% CI)</td>
<td>30</td>
<td></td>
<td>30</td>
<td></td>
<td></td>
<td>100.0</td>
<td>-3.36 [-8.09, 1.37]</td>
</tr>
<tr>
<td>Test for heterogeneity chi-square=0.00 df=0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>100.0</td>
<td>-3.36 [-8.09, 1.37]</td>
</tr>
<tr>
<td>Test for overall effect=1.39 p=0.10</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>100.0</td>
<td>-3.36 [-8.09, 1.37]</td>
</tr>
</tbody>
</table>
### Clotiapine for acute psychotic illnesses

**Comparison:** CLOTIAPINE versus STANDARD MEDICATION - BENZODIAZEPINES

**Outcome:** Leaving the study early

<table>
<thead>
<tr>
<th>Study</th>
<th>Treatment n/N</th>
<th>Control n/N</th>
<th>Relative Risk (Fixed)</th>
<th>Weight (%)</th>
<th>Relative Risk (Fixed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subramaney 1998</td>
<td>1/30</td>
<td>1/30</td>
<td></td>
<td>100.0</td>
<td>1.00 [0.07, 15.26]</td>
</tr>
<tr>
<td><strong>Total (95% CI)</strong></td>
<td>1/30</td>
<td>1/30</td>
<td></td>
<td>100.0</td>
<td>1.00 [0.07, 15.26]</td>
</tr>
</tbody>
</table>

Test for heterogeneity chi-square: 0.00 df=0
Test for overall effect: 0.00 p=1.0

<table>
<thead>
<tr>
<th>Study</th>
<th>Treatment</th>
<th>Control</th>
<th>Relative Risk (Random)</th>
<th>Weight</th>
<th>Relative Risk (Random)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n/N</td>
<td>n/N</td>
<td></td>
<td>(%)</td>
<td></td>
</tr>
<tr>
<td>01 haloperidol - by 3 minutes</td>
<td>6/19</td>
<td>19/22</td>
<td>-</td>
<td>100.0</td>
<td>0.37 [0.18, 0.72]</td>
</tr>
<tr>
<td>Van Leeuwen 1997</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subtotal (95% CI)</td>
<td>6/19</td>
<td>19/22</td>
<td>-</td>
<td>100.0</td>
<td>0.37 [0.18, 0.72]</td>
</tr>
<tr>
<td>Test for heterogeneity chi-square=0.00 df=0</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Test for overall effect=-2.89 p=0.004</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>02 any psychotropics - by 30 minutes</td>
<td>4/19</td>
<td>10/22</td>
<td>-</td>
<td>100.0</td>
<td>0.46 [0.17, 1.24]</td>
</tr>
<tr>
<td>Van Leeuwen 1997</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subtotal (95% CI)</td>
<td>4/19</td>
<td>10/22</td>
<td>-</td>
<td>100.0</td>
<td>0.46 [0.17, 1.24]</td>
</tr>
<tr>
<td>Test for heterogeneity chi-square=0.00 df=0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Test for overall effect=-1.53 p=0.13</td>
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</tr>
</tbody>
</table>
### Study: Van Leeuwen 1997

<table>
<thead>
<tr>
<th>Study</th>
<th>Treatment n/N</th>
<th>Control n/N</th>
<th>Relative Risk (Random) 95% CI</th>
<th>Weight (%)</th>
<th>Relative Risk (Random) 95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Van Leeuwen 1997</td>
<td>0 / 19</td>
<td>0 / 22</td>
<td>0.0, Not estimable</td>
<td>0.0</td>
<td>0.0, Not estimable</td>
</tr>
</tbody>
</table>

Total (95% CI)

Test for heterogeneity chi-square = 0.0, df = 0
Test for overall effect = 0.0, p = 1.0

Favours treatment Favours control
Review: Droperidol for acute psychosis
Comparison: 02 DR0PERIDOL versus HALOPERIDOL
Outcome: 01 Global: Needing additional injections during the first 90 minutes

<table>
<thead>
<tr>
<th>Study</th>
<th>Treatment n/N</th>
<th>Control n/N</th>
<th>Relative Risk (Random) 95% CI</th>
<th>Weight (%)</th>
<th>Relative Risk (Random) 95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>01 by 30 minutes</td>
<td>4/11</td>
<td>13/16</td>
<td></td>
<td>100.0</td>
<td>0.45 [0.20, 1.01]</td>
</tr>
<tr>
<td>Resnick 1984</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subtotal (95% CI)</td>
<td>4/11</td>
<td>13/16</td>
<td></td>
<td>100.0</td>
<td>0.45 [0.20, 1.01]</td>
</tr>
<tr>
<td>Test for heterogeneity chi-square=0.00 df=0</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Test for overall effect=1.93 p=0.05</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>02 and also by 60 minutes</td>
<td>0/11</td>
<td>3/16</td>
<td></td>
<td>100.0</td>
<td>0.20 [0.01, 3.67]</td>
</tr>
<tr>
<td>Resnick 1984</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subtotal (95% CI)</td>
<td>0/11</td>
<td>3/16</td>
<td></td>
<td>100.0</td>
<td>0.20 [0.01, 3.67]</td>
</tr>
<tr>
<td>Test for heterogeneity chi-square=0.00 df=0</td>
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</tr>
<tr>
<td>Test for overall effect=1.09 p=0.3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>03 and also by 90 minutes</td>
<td>0/11</td>
<td>1/16</td>
<td></td>
<td>100.0</td>
<td>0.47 [0.02, 10.63]</td>
</tr>
<tr>
<td>Resnick 1984</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subtotal (95% CI)</td>
<td>0/11</td>
<td>1/16</td>
<td></td>
<td>100.0</td>
<td>0.47 [0.02, 10.63]</td>
</tr>
<tr>
<td>Test for heterogeneity chi-square=0.00 df=0</td>
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<tr>
<td>Test for overall effect=0.47 p=0.5</td>
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</tbody>
</table>
Review: Droperidol for acute psychosis
Comparison: 02 DROPERIDOL versus HALOPERIDOL
Outcome: 03 Mental State: Average score by 13 days (Scale for Quantification of Psychotic Symptom Severity, high to low)

<table>
<thead>
<tr>
<th>Study</th>
<th>Treatment N</th>
<th>Mean (SD)</th>
<th>Control N</th>
<th>Mean (SD)</th>
<th>Weight (%)</th>
<th>Weighted Mean Difference (Fixed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coocchi 1971</td>
<td>20</td>
<td>3.48 (0.27)</td>
<td>20</td>
<td>3.37 (0.31)</td>
<td>100.0</td>
<td>0.11 [-0.07, 0.26]</td>
</tr>
<tr>
<td>Total (95% CI)</td>
<td>20</td>
<td></td>
<td>20</td>
<td></td>
<td>100.0</td>
<td>0.11 [-0.07, 0.26]</td>
</tr>
</tbody>
</table>

Test for heterogeneity chi-square=0.00 df=0
Test for overall effect=1.20 p=0.2
### Review:
Droperidol for acute psychosis

### Comparison:
02 DROPERIDOL versus HALOPERIDOL

### Outcome:
04 Adverse effects: Dystonia (mild)

<table>
<thead>
<tr>
<th>Study</th>
<th>Treatment n/N</th>
<th>Control n/N</th>
<th>Relative Risk (Random) 95% CI</th>
<th>Weight (%)</th>
<th>Relative Risk (Random) 95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resnick 1994</td>
<td>0 / 11</td>
<td>1 / 16</td>
<td>[0.47, 10.63]</td>
<td>100.0</td>
<td>[0.47, 10.63]</td>
</tr>
</tbody>
</table>

**Total (95% CI):**

- Test for heterogeneity chi-square=0.00 df=0
- Test for overall effect=0.47 p=0.8

---

Favours treatment Favours control

### Zuclopenthixol acetate in the treatment of acute schizophrenia and similar serious mental illnesses

**Comparison:** ZUCLOPENTHIOL ACETATE versus 'STANDARD DRUG CARE'

**Outcome:** Behavior (NOSIE: high score=best)

<table>
<thead>
<tr>
<th>Study</th>
<th>Zuc-acetate N</th>
<th>Mean (SD)</th>
<th>Standard drug care N</th>
<th>Mean (SD)</th>
<th>Weight (%)</th>
<th>Weighted Mean Difference (Fixed) 95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canada 1994</td>
<td>20</td>
<td>176.91 (8.96)</td>
<td>20</td>
<td>181.73 (9.25)</td>
<td>100.0</td>
<td>-4.82 [-10.46, 0.82]</td>
</tr>
</tbody>
</table>

Total (95% CI)

Test for heterogeneity chi-square=0.00 df=0

Test for overall effect=1.67 p=0.09
### Review: Zuclopenthixol acetate in the treatment of acute schizophrenia and similar serious mental illnesses

**Comparison:** ZUCLOPENTHIxoL ACETATE versus 'STANDARD DRUG CARE'

**Outcome:** Number of people requiring supplementary antipsychotic medication

<table>
<thead>
<tr>
<th>Study</th>
<th>Zuclo-acetate</th>
<th>Standard drug care</th>
<th>Peto Odds Ratio 95% CI</th>
<th>Weight (%</th>
<th>Peto Odds Ratio 95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canada 1994</td>
<td>12 / 20</td>
<td>8 / 20</td>
<td></td>
<td>100.0</td>
<td>2.18 [0.64, 7.42]</td>
</tr>
<tr>
<td><strong>Total (95% CI)</strong></td>
<td>12 / 20</td>
<td>8 / 20</td>
<td></td>
<td>100.0</td>
<td>2.18 [0.64, 7.42]</td>
</tr>
</tbody>
</table>

Test for heterogeneity chi-square=0.00 df=0
Test for overall effect=1.25 p=0.2

---

Favours zuclo-acetate   Favours 'standard'
**Review:** Zuclopenthixol acetate in the treatment of acute schizophrenia and similar serious mental illnesses

**Comparison:** 01 ZUCLOPENTHIXOL ACETATE versus 'STANDARD DRUG CARE'

**Outcome:** 04 Global improvement - average change at day nine (CGI: high score=poor)

<table>
<thead>
<tr>
<th>Study</th>
<th>Zuclo-acetate N</th>
<th>Mean (SD)</th>
<th>Standard drug care N</th>
<th>Mean (SD)</th>
<th>Weighted Mean Difference (Fixed) 95% CI</th>
<th>Weight (%)</th>
<th>Weighted Mean Difference (Fixed) 95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canada 1994</td>
<td>20</td>
<td>4.95 (0.94)</td>
<td>20</td>
<td>5.00 (1.29)</td>
<td>-0.05 [-0.75, 0.65]</td>
<td>100.0</td>
<td>-0.05 [-0.75, 0.65]</td>
</tr>
<tr>
<td><strong>Total (95% CI)</strong></td>
<td><strong>20</strong></td>
<td></td>
<td>20</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Test for heterogeneity chi-square=0.00 df=0
Test for overall effect=0.14 p=0.9
Review: Zuclopenthixol acetate in the treatment of acute schizophrenia and similar serious mental illnesses
Comparison: 01 ZUCLOPENTHIOL ACETATE versus ‘STANDARD DRUG CARE’
Outcome: 05 Mental state - no important improvement at >36 hours

<table>
<thead>
<tr>
<th>Study</th>
<th>Zucl-acetate n/N</th>
<th>Standard drug care n/N</th>
<th>Peto Odds Ratio</th>
<th>Weight (%)</th>
<th>Peto Odds Ratio 95% CI</th>
<th>Peto Odds Ratio 95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canada 1994</td>
<td>4/20</td>
<td>4/20</td>
<td></td>
<td>34.3</td>
<td>1.00 [0.22, 4.62]</td>
<td></td>
</tr>
<tr>
<td>Nordic 1993</td>
<td>7/83</td>
<td>7/65</td>
<td></td>
<td>65.7</td>
<td>0.76 [0.25, 2.30]</td>
<td></td>
</tr>
<tr>
<td>Total (95% CI)</td>
<td>11/103</td>
<td>11/85</td>
<td></td>
<td>100.0</td>
<td>0.84 [0.34, 2.05]</td>
<td></td>
</tr>
</tbody>
</table>

Test for heterogeneity chi-square=0.08 df=1 p=0.7785
Test for overall effect=0.39 p=0.7
<table>
<thead>
<tr>
<th>Study</th>
<th>Zuclopenthixol n/N</th>
<th>Standard drug care n/N</th>
<th>Peterson Odds Ratio 95% CI</th>
<th>Weight (%)</th>
<th>Peterson Odds Ratio 95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>91 elevation of activity (hyperkinesia)</td>
<td>4/80</td>
<td>3/85</td>
<td>100.0 1.60 [0.41, 6.10]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nordic 1992</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subtotal (95% CI)</td>
<td>6/80</td>
<td>3/85</td>
<td>100.0 1.60 [0.41, 6.10]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Test for heterogeneity chi-square 0.00 df=0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Test for overall effect 0.05 p=0.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>92 reduction in movement (hypokinesia)</td>
<td>5/80</td>
<td>10/85</td>
<td>100.0 0.30 [0.12, 1.05]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nordic 1990</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subtotal (95% CI)</td>
<td>10/80</td>
<td>10/85</td>
<td>100.0 0.30 [0.12, 1.05]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Test for heterogeneity chi-square 0.00 df=0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Test for overall effect 1.07 p=0.06</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>93 restlessness (motor akathisia)</td>
<td>7/83</td>
<td>4/85</td>
<td>100.0 1.39 [0.40, 4.77]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nordic 1993</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subtotal (95% CI)</td>
<td>7/83</td>
<td>4/85</td>
<td>100.0 1.39 [0.40, 4.77]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Test for heterogeneity chi-square 0.00 df=0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Test for overall effect 0.52 p=0.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>94 rigidity</td>
<td>12/83</td>
<td>12/85</td>
<td>100.0 0.75 [0.31, 1.80]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nordic 1993</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subtotal (95% CI)</td>
<td>12/83</td>
<td>12/85</td>
<td>100.0 0.75 [0.31, 1.80]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Test for heterogeneity chi-square 0.00 df=0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Test for overall effect 0.85 p=0.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>95 episodic postural disorder (dystonia)</td>
<td>7/83</td>
<td>8/85</td>
<td>100.0 0.66 [0.32, 1.91]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nordic 1993</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subtotal (95% CI)</td>
<td>7/83</td>
<td>8/85</td>
<td>100.0 0.66 [0.32, 1.91]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Test for heterogeneity chi-square 0.00 df=0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Test for overall effect 0.77 p=0.4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>96 tremor</td>
<td>7/83</td>
<td>9/85</td>
<td>100.0 0.57 [0.20, 1.62]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nordic 1993</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subtotal (95% CI)</td>
<td>7/83</td>
<td>9/85</td>
<td>100.0 0.57 [0.20, 1.62]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Test for heterogeneity chi-square 0.00 df=0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Test for overall effect 1.85 p=0.3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Review: Zuclopenthixol acetate in the treatment of acute schizophrenia and similar serious mental illnesses

#### Comparison: ZUCLOPENTHIOL ACETATE versus 'STANDARD DRUG CARE'

#### Outcome: Side effects - movement disorder treated by antiparkinsonian medication

<table>
<thead>
<tr>
<th>Study</th>
<th>Zucl-acetate n/N</th>
<th>Standard drug care n/N</th>
<th>Peto Odds Ratio 95% CI</th>
<th>Weight (%)</th>
<th>Peto Odds Ratio 95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canada 1994</td>
<td>20 / 20</td>
<td>20 / 20</td>
<td></td>
<td>0.0</td>
<td>Not estimable</td>
</tr>
<tr>
<td>Nordic 1993</td>
<td>45 / 83</td>
<td>41 / 65</td>
<td>0.70 [0.36, 1.34]</td>
<td>82.7</td>
<td></td>
</tr>
</tbody>
</table>

*Note: The graph shows the odds ratio and confidence intervals for the studies.*

---

Page 31 of 34
Review: Zuclopenthixol acetate in the treatment of acute schizophrenia and similar serious mental illnesses
Comparison: ZUCLOPENTHIOL ACETATE versus 'STANDARD DRUG CARE'
Outcome: Side effects - non specific

<table>
<thead>
<tr>
<th>Study</th>
<th>Zucol-acetate n/N</th>
<th>Standard drug care n/N</th>
<th>Peto Odds Ratio 95% CI</th>
<th>Weight (%)</th>
<th>Peto Odds Ratio 95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>01 at 1 day&lt;br&gt;Nordic 1993</td>
<td>9 /83</td>
<td>13 /65</td>
<td>0.40 [0.20, 1.21]</td>
<td>100.0</td>
<td>0.40 [0.20, 1.21]</td>
</tr>
<tr>
<td>Subtotal (95% CI)</td>
<td>9 /83</td>
<td>13 /65</td>
<td>Test for heterogeneity chi-square=0.00 df=0</td>
<td>Test for overall effect=-1.55 p=0.12</td>
<td></td>
</tr>
<tr>
<td>02 at 3 days&lt;br&gt;Nordic 1993</td>
<td>21 /83</td>
<td>17 /65</td>
<td>0.96 [0.46, 2.01]</td>
<td>100.0</td>
<td>0.96 [0.46, 2.01]</td>
</tr>
<tr>
<td>Subtotal (95% CI)</td>
<td>21 /83</td>
<td>17 /65</td>
<td>Test for heterogeneity chi-square=0.00 df=0</td>
<td>Test for overall effect=-0.12 p=0.9</td>
<td></td>
</tr>
<tr>
<td>03 at 6 days&lt;br&gt;Nordic 1993</td>
<td>19 /83</td>
<td>20 /65</td>
<td>0.67 [0.32, 1.39]</td>
<td>100.0</td>
<td>0.67 [0.32, 1.39]</td>
</tr>
<tr>
<td>Subtotal (95% CI)</td>
<td>19 /83</td>
<td>20 /65</td>
<td>Test for heterogeneity chi-square=0.00 df=0</td>
<td>Test for overall effect=-1.06 p=0.3</td>
<td></td>
</tr>
</tbody>
</table>
### Review: Zuclopenthixol acetate in the treatment of acute schizophrenia and similar serious mental illnesses

**Comparison:** 01 ZUCLOPENTHIOL ACETATE versus 'STANDARD DRUG CARE'

**Outcome:** 12 Leaving study early by 7 days

<table>
<thead>
<tr>
<th>Study</th>
<th>Zucol-acetate n/N</th>
<th>Standard drug care n/N</th>
<th>Peto Odds Ratio 95% CI</th>
<th>Weight (%)</th>
<th>Peto Odds Ratio 95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canada 1994</td>
<td>0 /20</td>
<td>0 /20</td>
<td></td>
<td>0.0</td>
<td>Not estimable</td>
</tr>
<tr>
<td>France 1988</td>
<td>1 /58</td>
<td>3 /58</td>
<td>4</td>
<td>31.7</td>
<td>0.36 [0.05, 2.61]</td>
</tr>
<tr>
<td>Nordio 1993</td>
<td>5 /83</td>
<td>4 /66</td>
<td></td>
<td>68.3</td>
<td>0.98 [0.25, 3.79]</td>
</tr>
<tr>
<td>South Africa 1996</td>
<td>0 /21</td>
<td>0 /17</td>
<td></td>
<td>0.0</td>
<td>Not estimable</td>
</tr>
<tr>
<td>South Africa 1997</td>
<td>0 /10</td>
<td>0 /6</td>
<td></td>
<td>0.0</td>
<td>Not estimable</td>
</tr>
</tbody>
</table>

Total (95% CI): 6 /192 vs 7 /166  
Test for heterogeneity chi-square=0.67 df=1 p=0.4129  
Test for overall effect=-0.60 p=0.6
Appendix 9:

Health economics searches, evidence tables and references

This appendix first presents the searches, and then summarises the findings by search topic. The list of reviewed papers appears in section 9.12.

9.1 The searches

9.1.2 Databases and initial search strategies

The databases searched for the health economic evidence are: Medline, Embase, OHE HEED, and NHS EED. Searches were not conducted for the separate topics, but one search was designed to cover all material, and the search completed by 28 January 2003. Below are the search terms and strategies for each database and the number of hits.

Medline (1)

#1 (de escalat$.tw or de fus$.tw or exp Restraint/ Physical or restrain$.ti or coerc$.ti or seclu$.ti or constrain$.ti or tranquili$.ti) and (exp Mental Disorders or psychiatr$.ti or paranoi$.ti or schizo$.ti or anxio$.ti or mani$.ti or depress$.ti or psychiatric inpatient$.ti) and (economic evaluations and quality of life search filters- see cbmeconfil and cbmqolfil on the Medline database)

OR

#2 (violen$.ti or disturb$.ti or anger.ti or rage$.ti or intimidat$.ti or aggress$.ti or danger$.ti or attack$.ti or threat$.ti or combative$.ti or assault$.ti) and (exp Mental Disorders or psychiatr$.ti or paranoi$.ti or schizo$.ti or anxio$.ti or mani$.ti or depress$.ti or psychiatric inpatient$.ti) and (economic evaluations and quality of life search filters- see cbmeconfil and cbmqolfil on the Medline database)

#3 #1 OR #2

#4 (de escalat$.tw or de fus$.tw or exp Restraint/ Physical or restrain$.ti or coerc$.ti or seclu$.ti or constrain$.ti or tranquili$.ti) and (violen$.ti or disturb$.ti or anger.ti or rage$.ti or intimidat$.ti or aggress$.ti or danger$.ti or attack$.ti or threat$.ti or combative$.ti or assault$.ti) and (exp Mental Disorders or psychiatr$.ti or paranoi$.ti or schizo$.ti or anxio$.ti or mani$.ti or depress$.ti or psychiatric inpatient$.ti)

#5 #3 OR #4 = 196 hits.

Medline (2)

(psychiatric inpatient$.tw OR inpatient$.tw OR psychiatric$.tw OR psycho$.tw OR schizophren$.tw OR anxi$.tw OR depress$.tw OR hyst$.tw OR mani$.tw OR personality disorder$.tw OR bi polar$.tw OR exp Mental Disorder OR mental disorder$.tw)

AND

(brief psychiatric rating scale$.ti OR bprs.ti OR overt agitation severity scale$.ti OR behaviour symptom identification scale$.tw OR overt aggression scale$.ti OR child behaviour)
Violence: The Short-Term Management of Disturbed/Violent Behaviour in Psychiatric In-patients and Emergency Departments Guideline

checklist$..ti OR mmpl$..ti OR vrin$..ti OR devereux scale$..ti OR assessment inventory..ti OR dissociative experience scale$..ti OR staff observation aggression scale$..ti OR soas$..ti)

AND

(violen$..tw OR aggress$..tw OR agitat$..tw OR rage$..tw OR anger..tw OR angry..tw OR disturb$..tw) = 132 hits

**Embase (1)**

#1
(de escalat* or de fus* or restrain* or coerc* or seclu* or constrain* or tranquili*) and (psychiatric inpatient* or mental disorder*) and (economic* or cost* or fee* or charge* or budget* or pric* or quality of life or life quality or quality adjusted life year or well being)

OR

#2
(violen* or disturb* or anger or rage* or intimidat* or aggress* or danger* or attack* or threat* or combative or assault*) and (mental disorder* or psychiatric inpatient*) and (economic* or cost* or fee* or charge* or budget* or pric* or quality of life or life quality or quality adjusted life year or well being)

#3

#1 OR #2

#4
(de escalat* or de fus* or restrain* or coerc* or seclu* or constrain* or tranquili*) and (violien* or disturb* or anger or rage* or intimidat* or aggress* or danger* or attack* or threat* or combative or assault*) and (mental disorder* or psychiatric inpatient*)

#5

#3 OR #4 193 Hits

**Embase (2)**

(violen* or aggress* or agitat* or rage* or anger or angry or disturb* or angry) and (psychiatric inpatient* or inpatient* or psychiatr* or psychos* or schizophren* or anxii* or depress* or hyster* or manii* or personality disorder* or bi polar* or mental disorder*) and (brief psychiatric rating scale* or bprs or basis 32 or overt agitation severity scale* or behaviour symptom identification scale* or overt aggression scale* or child behaviour checklist* or mmpl* or vrin* or devereux scale* or assessment inventory or dissociative experience scale* or staff observation aggression scale* or soas) in TI) = 45 hits

**OHE HEED**

(Due to a fault in the system, this database does not allow any complex searching).
Search term- ‘psychiatric inpatient’ = 12 hits.

**NHS EED**

(Very complex searching and long search terms cannot be used on this database. The database automatically truncates terms).
9.1.2. Sifting of the results

Given the expectation that there will be few economic studies that address any of the topics, no strict criteria were used other than (a) that the study addresses violence in in-patient psychiatric settings, and (b) that the study has an economic or an evaluative component, or (c) that the study aims to quantify different degrees of violent behaviour. Comments and letters were excluded. Of the 678 articles identified in the initial search, around 80 were of any relevance to criterion (a). This was further narrowed down to 29 papers by (b) and (c), and these were ordered for review. A further six were identified from other sources and ordered. Section 9.11 lists the 35 papers reviewed from this initial search.

Judging from the titles/abstracts, the distribution of these papers is as follows (n = 37 since some papers correspond to more than one category):

<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>6</td>
<td>3</td>
<td>2</td>
<td>7</td>
<td>12</td>
<td>1</td>
<td>0</td>
<td>2</td>
</tr>
</tbody>
</table>

9.1.3. An additional search on rapid tranquillisation

The initial health economics search resulted in only one study on rapid tranquillisation, which was a comment (and therefore excluded), and did not result in any of the studies identified in the NICE guideline on schizophrenia. Therefore, an additional search was carried out, using the same databases, and the following strategies.

Medline

1. Violence/ (12961)
2. violen$.tw. (13530)
3. disturb$.tw. (90012)
4. anger.tw. (3921)
5. angry.tw. (853)
6. rage$.tw. (969)
7. intimidat$.tw. (302)
8. aggress$.tw. (52942)
9. danger$.tw. (21806)
10. attack$.tw. (45101)
11. threat$.tw. (40380)
12. combative.tw. (119)
13. assault$.tw. (3820)
14. or/1-13 (264773)
15. Emergency Services, Psychiatric/ (1291)
Violence: The Short-Term Management of Disturbed/Violent Behaviour in Psychiatric In-patients and Emergency Departments Guideline

16 (psychiatric adj3 emergenc$).tw. (1181)
17 ((rapid$ or acute or short-acting or fast-acting or emergenc$ or urgent) adj3 (sedat$ or tranquil$)).tw. (550)
18 ((chemical$ or pharmacological) adj3 restrain$).tw. (250)
19 (acute adj3 agitation).mp. [mp=title, abstract, cas registry/ec number word, mesh subject heading] (83)
20 Haloperidol/ (11688)
21 haloperidol.tw. (11589)
22 PROMAZINE/ (624)
23 promazine.tw. (309)
24 LORAZEPAM/ (1770)
25 lorazepam.tw. (1897)
26 DIAZEPAM/ (14402)
27 diazepam.tw. (13357)
28 FLUNITRAZEPAM/ (2314)
29 flunitrazepam.tw. (2508)
30 CLONAZEPAM/ (1696)
31 clonazepam.tw. (2035)
32 MIDAZOLAM/ (4119)
33 midazolam.tw. (4970)
34 PROCHLORPERAZINE/ (630)
35 prochlorperazine.tw. (415)
36 exp Benzodiazepines/ (39331)
37 benzdiazepine$.tw. (18293)
38 exp BENZODIAZEPINONES/ (28453)
39 benzodiazepinone$.tw. (22)
40 CHLORPROMAZINE/ (11061)
41 chlorpromazine.tw. (7270)
42 CLOPENTHIXOL/ (278)
43 clopenthixol.tw. (143)
44 neuroleptic$.tw. (14027)
45 or/15-44 (87756)
46 economics/ (25927)
47 exp "costs and cost analysis"/ (103775)
48 economic value of life/ (6987)
49 exp economics, hospital/ (12123)
50 exp economics, medical/ (9573)
51 economics, nursing/ (3585)
52 economics, pharmaceutical/ (1151)
53 exp models, economic/ (3256)
54 exp "fees and charges"/ (20793)
55 exp budgets/ (7883)
56 ec.fs. (173391)
57 (cost or costs or costed or costly or costing$).tw. (122834)
58 (economic$ or pharmacoeconomic$ or pharmaco-economic$ or price$ or pricing$).tw. (61073)
59 or/46-58 (344815)
60 14 and 45 and 59 (71)
61 from 60 keep 1-71 (71)

Embase

#49 #14 and #48 (217 records)
#48 #43 and #47 (3986 records)
#47 #44 or #45 or #46 (202916 records)
#46 ((economic* or pharmacoeconomic* or pharmaco-economic* or price* or pricing*) in ti) and (PY=1985-2002) (9160 records)
#45 ((cost*) in TI) and (PY=1985-2002) (20835 records)
#44 explode 'economic-aspect' / all subheadings (197794 records)
NHS EED

clopenthixol or chlorpromazine or benzodiapene or prochlorperazine or midazolam or clonazepam or flunitrazepam or diazepam or lorazepam or promazine or haloperidol OR (chemical or pharmacological) and restrain OR rapid sedation or acute sedation or short-acting sedation or fast acting sedation or emergency sedation or urgent sedation or tranquil* OR

Grand total: 336 hits

These searches resulted in 336 hits, of which 25 were in the context of violent behaviour in in-patient psychiatric settings. Judging from the titles and abstracts, four
papers were identified as possible economic studies. These four studies were included in the schizophrenia guideline.

9.2 Environmental concerns and alarm systems

Of the two papers identified as addressing environment, both are evaluations and give descriptions of outcomes but lack input data (i.e. these are not cost-effectiveness studies). These are summarised below. A third paper on environment was not available. There were no papers with economic analyses of alarm systems.

<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Category</strong></td>
<td>Environment</td>
</tr>
<tr>
<td><strong>Population/country</strong></td>
<td>1000-bed maximum-security forensic psychiatric hospital for men, US.</td>
</tr>
<tr>
<td><strong>Intervention</strong></td>
<td>Total quality management to reduce mealtime violence (change procedure, introduce plastic disposable cutlery, play music chosen by music therapist, therapeutic communication training for food service staff).</td>
</tr>
<tr>
<td><strong>Outcome measure</strong></td>
<td>Incidence of violence (40 per cent reduction); incidence of weapon attacks with silverware (100 per cent reduction); meal procedure staff time (70 nursing staff hours / day); staff compensation pay (up to 24 per cent reduction).</td>
</tr>
<tr>
<td><strong>Cost measure/year</strong></td>
<td>Not mentioned.</td>
</tr>
<tr>
<td><strong>Comments</strong></td>
<td>Can be revisited under staff training?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Category</strong></td>
<td>Environment</td>
</tr>
<tr>
<td><strong>Population/country</strong></td>
<td>Psychiatric unit of community hospital, US.</td>
</tr>
<tr>
<td><strong>Intervention</strong></td>
<td>Violence prevention program based on OSHA (Occupational Health and Safety Administration) recommendation.</td>
</tr>
<tr>
<td><strong>Outcome measure</strong></td>
<td>Workers’ compensation payments for assaults (up to 70 per cent reduction).</td>
</tr>
<tr>
<td><strong>Cost measure/year</strong></td>
<td>Extra staff/personnel cost mentioned by no levels/figures given.</td>
</tr>
<tr>
<td><strong>Comments</strong></td>
<td>Can be revisited under staff training.</td>
</tr>
</tbody>
</table>

9.3 Prediction: antecedents, warning signs and risk assessment

9.3.1. The literature review

The search identified eight papers on prediction, summarised below. None of them are economic evaluations.

<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Category</strong></td>
<td>Cost of violence, prediction.</td>
</tr>
<tr>
<td><strong>Population/country</strong></td>
<td>Danish psychiatric hospital.</td>
</tr>
<tr>
<td><strong>Intervention</strong></td>
<td>One-year prospective descriptive study.</td>
</tr>
<tr>
<td><strong>Outcome measure</strong></td>
<td>Correlation between SOAS and diagnosis, by sex.</td>
</tr>
<tr>
<td><strong>Cost measure/year</strong></td>
<td>?</td>
</tr>
<tr>
<td>Comments</td>
<td>“There was a strong association between the use of coercive measures and violent behaviour (abstract).” Full paper not yet in file.</td>
</tr>
<tr>
<td>Category</td>
<td>Prediction [review].</td>
</tr>
<tr>
<td>Intervention</td>
<td>Risk appraisal guide (VRAG).</td>
</tr>
<tr>
<td>Outcome measure</td>
<td>Actuarial methods outperform clinical judgement, for example, violence risk appraisal guide (VRAG).</td>
</tr>
<tr>
<td>Cost measure/year</td>
<td>None (although mentions staff training costs possibly being outweighed by benefits).</td>
</tr>
<tr>
<td>Comments</td>
<td>No evaluation.</td>
</tr>
<tr>
<td>Intervention</td>
<td>Retrospective study of relationship between two-week preadmission threats of violence and violent behaviour within three days of acute hospitalisation ( n = 253 ).</td>
</tr>
<tr>
<td>Outcome measure</td>
<td>Cross tab of verbal threats and assault-related events; by diagnosis (schizophrenia, mania, other); chi-square tests; highly significant prediction for schizophrenia patients, less for others; victim of violence can be other than those initially intended.</td>
</tr>
<tr>
<td>Cost measure/year</td>
<td>None.</td>
</tr>
<tr>
<td>Comments</td>
<td>No evaluation.</td>
</tr>
<tr>
<td>Intervention</td>
<td>Test of a theoretical model retrospectively explaining violence by antecedent variables (history of violence, diagnosis, length of hospitalisation) and mediating variables (intimidation, interpersonal control, accommodation). ( n = 156 ).</td>
</tr>
<tr>
<td>Outcome measure</td>
<td>60 per cent of aggression explained by intimidation and interpersonal control, length of hospitalisation, history of violence, and bipolar affective syndrome.</td>
</tr>
<tr>
<td>Cost measure/year</td>
<td>None.</td>
</tr>
<tr>
<td>Comments</td>
<td>‘Aggression’ of the model is about aggressive behaviour patterns over time, as opposed to specific incidents of violence. No evaluation.</td>
</tr>
<tr>
<td>Category</td>
<td>Prediction.</td>
</tr>
</tbody>
</table>
### Intervention

- **Outcome measure**: Retrospectively recorded external/internal events preceding incidents of restraint, from both patient and staff point of view; see if patient attitude to restraint experience had correlation with further violent behaviour in three-month period.
- **Cost measure/year**: None.
- **Comments**: Has no comparator - how often do these ‘precedents’ happen and yet not lead to violent behaviour? No evaluation.


<table>
<thead>
<tr>
<th>Category</th>
<th>Prediction [review].</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Population/country</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Intervention</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Outcome measure</strong></td>
<td>A review of the correlation between certain personalities and their likelihood of violent behaviour.</td>
</tr>
<tr>
<td><strong>Cost measure/year</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Comments</strong></td>
<td>Prediction of violence over time, not of an incident. No evaluation.</td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Category</th>
<th>Prediction.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Population/country</strong></td>
<td>Corrections-based in-patient psychiatric hospital, US.</td>
</tr>
<tr>
<td><strong>Intervention</strong></td>
<td>(Retrospective?) correlation between PAI and overt aggression scale.</td>
</tr>
<tr>
<td><strong>Outcome measure</strong></td>
<td>Significant but low correlation (&lt;0.3) found.</td>
</tr>
<tr>
<td><strong>Cost measure/year</strong></td>
<td>None.</td>
</tr>
<tr>
<td><strong>Comments</strong></td>
<td>Not clear whether the correlation was PAI before an incidence and OAS after the incidence. No evaluation.</td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Category</th>
<th>Prediction.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Population/country</strong></td>
<td>20-bed PICU, veterans’ hospital, US.</td>
</tr>
<tr>
<td><strong>Intervention</strong></td>
<td>Prospective study of correlation between brief psychiatric rating scale and violent behaviour in schizophrenia patients within eight days of admission (n = 207).</td>
</tr>
<tr>
<td><strong>Outcome measure</strong></td>
<td>Severity of schizophrenia measured by BPRS was correlated to violent behaviour.</td>
</tr>
<tr>
<td><strong>Cost measure/year</strong></td>
<td>None.</td>
</tr>
<tr>
<td><strong>Comments</strong></td>
<td>No evaluation.</td>
</tr>
</tbody>
</table>

### 9.3.2. Health economic comments on prediction

None of the reviewed studies are economic evaluations, but a very simplified net benefit analysis will build upon:

- Net benefit of a true positive prediction = - R + AL - CI
- Net benefit of a true negative prediction = - R
- Net benefit of a false positive prediction = - R - CI
- Net benefit of a false negative prediction = - R - AL

Where:
Violence: The Short-Term Management of Disturbed/Violent Behaviour in Psychiatric In-patients and Emergency Departments Guideline

R: resource use for predicting (for example, staff training, monitoring for indicators etc)
AL: the averted loss associated with the prevented violence
CI: the cost of early intervention (for example, extra staff time and inconvenience to the patient of observation).

Overall net benefit of prediction (combined with a 100 per cent effective early intervention) will depend on the above information, and the sensitivity/specificity of the prediction. But many studies only report sensitivity, ignoring specificity.

Assuming R is negligible, evidence-based guidance on prediction will require information on AL and CI. Reality is more complicated than the above. For example, the sensitivity of the prediction may well be correlated with the magnitude of the possible violent behaviour, and thus with AL; at the same time the early preventive intervention may become less effective, more labour intensive, or more intrusive to the patient.

9.4 De-escalation techniques

Of the two papers identified as addressing de-escalation, neither are evaluations. Both are summarised below.

| Category | De-escalation. |
| Population/country | |
| Intervention | |
| Outcome measure | |
| Cost measure/year | |
| Comments | Paper not relevant. (In-depth interviews of psychiatric nurses in the US. Indicates what an experienced nurse goes through during successful de-escalation, but does not investigate which of these factors might also be shared with failed de-escalation.). |

| Category | De-escalation. |
| Population/country | |
| Intervention | |
| Outcome measure | |
| Cost measure/year | |
| Comments | Paper not relevant. (Description on how de-escalation might work, with caveats; no evaluation). |

9.5 Physical interventions and seclusion
The health economics literature search identified 15 papers on seclusion and/or restraint, summarised below. None of them are economic evaluations.

<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Title</th>
<th>Category</th>
<th>Population/country</th>
<th>Intervention</th>
<th>Outcome measure</th>
<th>Cost measure/year</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bjørkly</td>
<td>Open-area seclusion in the long-term treatment of aggressive and disruptive psychotic patients, an introduction to a ward procedure, <em>Psychological Reports</em>. 1995.</td>
<td>Seclusion and restraint.</td>
<td>Eight-bed special secure unit, county hospital, Norway; psychotic patients criminal + civil; staff-to-patient ratio 3.5.</td>
<td>Therapeutic ‘open-area seclusion’ debriefing.</td>
<td>Reality re-orientation; staff attitudes.</td>
<td>None.</td>
<td>Therapeutic, as opposed to administrative sanction / safety procedure. No evaluation.</td>
</tr>
<tr>
<td>Bornstein</td>
<td>The use of restraints on a general psychiatric unit. <em>Journal of Clinical Psychiatry</em>. 1985.</td>
<td>Seclusion and restraint.</td>
<td>Acute psychiatric unit, two large general hospitals, US.</td>
<td>Nine-month prospective study of all restrained patients during the course of hospitalisation.</td>
<td>Percentage restraint by background characteristics. 75 episodes of restraint per 1,000 admissions; Men / young / single or divorced more likely; race and insurance type not relevant; more serious psychiatric illness; staffing pattern relevant.</td>
<td>None.</td>
<td>No evaluation.</td>
</tr>
<tr>
<td>Hammill et al.</td>
<td>Hospitalized schizophrenic patient views about seclusion. <em>Journal of Clinical Psychiatry</em>. 1989.</td>
<td>Seclusion and restraint.</td>
<td>In-patient schizophrenic unit, US. 100 consecutive admissions. DSM-III schizophrenia or schizoaffective disorder.</td>
<td>Post seclusion interview about episode within 48hrs.</td>
<td>n = 26; younger and less prior contact with in-patient mental health facilities more likely to be secluded; sex and race irrelevant. Patient views on seclusion: seclusion room needed on unit to control disruptive aggressive patient behaviours; seclusion makes patients feel angry and sad, and not protected or safe.</td>
<td>None.</td>
<td>No evaluation.</td>
</tr>
<tr>
<td>Category</td>
<td>Seclusion and restraint [review].</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Population/country</td>
<td>Literature review on patterns of seclusion and patient attitudes.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intervention</td>
<td>Who is secluded, for what, for how long? Variation in practice.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outcome measure</td>
<td>No evaluation. Need for clear guidelines on management strategies.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cost measure/year</td>
<td>Comments</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Category</th>
<th>Seclusion and restraint.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population/country</td>
<td>Psychiatric unit of a district general hospital, UK.</td>
</tr>
<tr>
<td>Intervention</td>
<td>Differentiated levels of nursing observation and supervision.</td>
</tr>
<tr>
<td>Outcome measure</td>
<td>None (incidence after implementation reported but no baseline provided, and therefore useless).</td>
</tr>
<tr>
<td>Cost measure/year</td>
<td>None.</td>
</tr>
<tr>
<td>Comments</td>
<td>No evaluation.</td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Category</th>
<th>Seclusion and restraint.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population/country</td>
<td>Not included (letter on van Rybroek et al, PADS, below).</td>
</tr>
<tr>
<td>Intervention</td>
<td></td>
</tr>
<tr>
<td>Outcome measure</td>
<td></td>
</tr>
<tr>
<td>Cost measure/year</td>
<td></td>
</tr>
<tr>
<td>Comments</td>
<td></td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Category</th>
<th>Seclusion and restraint.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population/country</td>
<td>Seven nurses in closed wards of psychiatric teaching hospital, Australia.</td>
</tr>
<tr>
<td>Intervention</td>
<td>Interview of nurses with qualitative analysis.</td>
</tr>
<tr>
<td>Outcome measure</td>
<td></td>
</tr>
<tr>
<td>Cost measure/year</td>
<td>No evaluation.</td>
</tr>
<tr>
<td>Comments</td>
<td></td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Category</th>
<th>Seclusion and restraint.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population/country</td>
<td>[Review of use and effect of seclusion; alternatives].</td>
</tr>
<tr>
<td>Intervention</td>
<td></td>
</tr>
<tr>
<td>Outcome measure</td>
<td></td>
</tr>
<tr>
<td>Cost measure/year</td>
<td></td>
</tr>
<tr>
<td>Comments</td>
<td>“The potentially positive results of seclusion often are negated by various non-therapeutic effects.” No formal assessment.</td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Category</th>
<th>Seclusion and restraint / Rapid tranquillisation [comment].</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population/country</td>
<td></td>
</tr>
<tr>
<td>Intervention</td>
<td></td>
</tr>
<tr>
<td>Outcome measure</td>
<td>Cost measure/year</td>
</tr>
<tr>
<td>-----------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>Not included (comment on a letter).</td>
<td></td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Category</th>
<th>Population/country</th>
<th>Intervention</th>
<th>Outcome measure</th>
<th>Cost measure/year</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seclusion and restraint.</td>
<td>Nursing home, US. 203 cognitive impaired residents.</td>
<td>None.</td>
<td>Ryden aggression scale, mini-mental state examination; frequency of restraints, seclusion and psychotropic drugs; by use of antipsychotics, anxiolytics and antidepressants.</td>
<td>None.</td>
<td>No evaluation. Significantly lower physical aggression scores found in those receiving antidepressants.</td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Category</th>
<th>Population/country</th>
<th>Intervention</th>
<th>Outcome measure</th>
<th>Cost measure/year</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seclusion and restraint.</td>
<td>In-patients in 20-bed regional secure unit, large psychiatric hospital, UK.</td>
<td>Retrospective study of pattern of seclusion.</td>
<td>Total admissions/yr, proportion secluded, time of incident; correlation between medication, trigger factors, diagnosis.</td>
<td>None.</td>
<td>No evaluation. “Consistent and regular occurrence over a five-year period of practice may suggest that seclusion of some disturbed patients will inevitably continue to be used as an effective intervention.”</td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Category</th>
<th>Population/country</th>
<th>Intervention</th>
<th>Outcome measure</th>
<th>Cost measure/year</th>
<th>Comments</th>
</tr>
</thead>
</table>


<table>
<thead>
<tr>
<th>Category</th>
<th>Population/country</th>
<th>Intervention</th>
<th>Outcome measure</th>
<th>Cost measure/year</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Observation; seclusion and restraint; rapid tranquillisation.</td>
<td>US; psychiatric in-patients; schizophrenia, depression, psychotic organic brain syndrome, mental retardation, other non-psychotic disorders.</td>
<td>Correlation between experience of control measures in past month and age / sex / race / length of stay / primary diagnosis.</td>
<td>Chi squared tests indicate correlation between control measures and age / length of stay / primary diagnosis, but not with sex and race.</td>
<td>None.</td>
<td></td>
</tr>
</tbody>
</table>
### Comments

No evaluation. Claims that use of control measures are ‘justified’ because of observed correlations. However, not obvious whether correlations are enough to justify.


<table>
<thead>
<tr>
<th>Category</th>
<th>Seclusion and restraints.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population/country</td>
<td>Forensic unit in mental health institute, US. Repetitively aggressive psychiatric patients.</td>
</tr>
<tr>
<td>Intervention</td>
<td>Ambulatory restraint procedure for repetitively aggressive patients after release from seclusion to avoid social distancing; full access to ward activity/milieu is made possible without provoking fear in other patients and staff.</td>
</tr>
<tr>
<td>Outcome measure</td>
<td>None. List of indications given. No complaints from patients.</td>
</tr>
<tr>
<td>Cost measure/year</td>
<td>None.</td>
</tr>
<tr>
<td>Comments</td>
<td>No evaluation. Looks at how to reintegrate after seclusion. PADS can help “produce a more humane atmosphere in a maximum security environment”.</td>
</tr>
</tbody>
</table>

### 9.6 Rapid tranquillisation

#### 9.6.1. Overall results

The additional search identified four papers on rapid tranquillisation. Of these, two are economic evaluations and two are cost analyses.


<table>
<thead>
<tr>
<th>Category</th>
<th>Rapid tranquillisation.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population/country</td>
<td>PICU, NHS hospital, UK; 83 patients, 45 per cent schizophrenia.</td>
</tr>
<tr>
<td>Intervention</td>
<td>None: retrospective baseline description of costs.</td>
</tr>
<tr>
<td>Outcome measure</td>
<td>None.</td>
</tr>
<tr>
<td>Cost measure/year</td>
<td>Fixed costs / semi-fixed costs / variable costs; total / per patient-year; no break down by drugs used.</td>
</tr>
<tr>
<td>Comments</td>
<td>No evaluation: not clear if proposed ‘protocol’ was in effect when study was carried out.</td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Category</th>
<th>Rapid tranquillisation.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population/country</td>
<td>PICU, NHS hospital, UK; in-patients with diagnosis of schizophrenia, mania, manic depression, substance misuse or other acute psychosis.</td>
</tr>
<tr>
<td>Intervention</td>
<td>Zuclopenthixol acetate vs. haloperidol for rapid tranquillisation.</td>
</tr>
<tr>
<td>Outcome measure</td>
<td>Assumed same.</td>
</tr>
<tr>
<td>Cost measure/year</td>
<td>Nursing staff costs, medical staff costs, damage to property, injury to people, drug prices (BNF).</td>
</tr>
<tr>
<td>Comments</td>
<td>Cost minimisation study: include in review.</td>
</tr>
</tbody>
</table>

**Laurier et al. Economic evaluation of zuclopenthixol acetate compared with injectable haloperidol in schizophrenic patients with acute psychosis. *Clinical Therapeutics.* 1997.**

<table>
<thead>
<tr>
<th>Category</th>
<th>Rapid tranquillisation.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population/country</td>
<td>Canada; schizophrenic patients hospitalised subsequent to A&amp;E visit.</td>
</tr>
<tr>
<td>Intervention</td>
<td>Zuclopenthixol acetate IM vs. haloperidol IM.</td>
</tr>
</tbody>
</table>
Thus, one (Hyde et al. 1998) of the two reviewed studies is a cost minimisation study of zuclopenthixol acetate and haloperidol; i.e. the effectiveness of the two drugs is assumed to be the same, and the study compares the costs of these two interventions. The second study (Laurier et al. 1997) is a cost consequence study of the same two drugs; i.e. both the outcomes and the costs of the two drugs are compared, where the various outcome indicators are not collapsed into, or represented by, a single variable. Both studies employ the health system’s perspective, and only consider direct medical costs. Neither study looks at longer-term effects. The two studies are compared to each other in the following section.

9.6.2. The two economic evaluation studies on rapid tranquillisation

The table below presents a head to head comparison of the two economic evaluations on rapid tranquillisation

<table>
<thead>
<tr>
<th>Category</th>
<th>Rapid tranquillisation.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population/country</td>
<td>A&amp;E in a Canadian hospital; patients with DSM-IV diagnosis of schizophrenia and who were treated with haloperidol.</td>
</tr>
<tr>
<td>Intervention</td>
<td>None: retrospective baseline description of direct costs.</td>
</tr>
<tr>
<td>Outcome measure</td>
<td>None.</td>
</tr>
<tr>
<td>Cost measure/year</td>
<td>Mean cost of emergency room stay; GP/psychiatrist time, medication, bed.</td>
</tr>
<tr>
<td>Comments</td>
<td>No evaluation; not clear if population/context is relevant.</td>
</tr>
</tbody>
</table>

Hyde et al. 1998  
Laurier et al. 1997

| Type of study | Cost minimisation; prospective, sequential.  
Cost consequence analysis; based on modelling. |
|--------------|-----------------------------------------------|
| Country / setting | UK; PICU.  
Canada; one psychiatric one general hospital; and literature. |
| Year of study | Dec 94 - Jan 96 from single PICU.  
1992 - 94 for costs from two hospitals. |
| Patients | In-patients with diagnosis of schizophrenia, mania, manic depression, substance misuse or other acute psychosis.  
Schizophrenic patients hospitalised subsequent to A&E visit. |
| Interventions | IM zuclopenthixol acetate (Z) vs. IM haloperidol (H) for rapid tranquillisation. |
| Dosage per injection | Z 25-150 mg; H 5-30 mg  
(dosage per incident not reported).  
Z 50-200mg; H 7-12 mg  
(dosage per incident not reported). |
| Sample size | Z 26; H 16.  
N/A for outcomes; 44 for costs. |
| Outcome measures | Effectiveness implicitly assumed same; side effects (drowsiness, tremor, rigor, dystonia, akathisia, visual disturbances and orofacial movements) recorded.  
Control of psychotic symptoms; degree of sedation; frequency of extrapyramidal symptoms. |
| Source of outcome data | Primary data collection in one hospital.  
Review of trial literature. |
| Cost measures | Direct costs: nursing staff costs, medical staff costs, damage to property, injury to people, drug prices.  
Direct costs: basic hospital stay, drugs, physician visits, diagnostic tests, nursing care. |
| Source of cost data       | Primary data collection in one hospital. | Z: review of trial literature;  
H: primary data collection from 2 hospitals. |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Duration of study</td>
<td>Entire episodes.</td>
<td>Nine days from A&amp;E admission.</td>
</tr>
<tr>
<td>Other considerations</td>
<td>Collected data on staff attitude towards the two drugs.</td>
<td>Model built around the number of injections required. Source of this info is the literature for Z and primary data for H.</td>
</tr>
<tr>
<td>Main results</td>
<td>- Side effects comparable.</td>
<td>- Similar control of symptoms.</td>
</tr>
<tr>
<td></td>
<td>- Drug cost per patient eight times higher for Z (GBP23 vs. GBP3).</td>
<td>- Similar side effects.</td>
</tr>
<tr>
<td></td>
<td>- Special nursing cost per patient two times lower for Z (386:794).</td>
<td>- More frequent injections with H.</td>
</tr>
<tr>
<td></td>
<td>- Total cost per patient two times lower for Z (469:863).</td>
<td>- Incremental cost of 50mg Z against 50mg H is CAD21-25.</td>
</tr>
<tr>
<td></td>
<td>- 20/21 staff preferred Z over H.</td>
<td>- Largest cost component basic hospital stay; similar for both drugs.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Next cost component is nursing.</td>
</tr>
<tr>
<td>Sensitivity analysis</td>
<td>None.</td>
<td>- Incremental cost of 100mg Z against 50mg H is CAD44-48.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Z at either dosage may have cost savings, depending on distribution of number of injections required.</td>
</tr>
<tr>
<td>Comments</td>
<td>- Results reported per patient during study period as opposed to per incidence (which may not be same).</td>
<td>- Distribution of no. of injections seems counterintuitive.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Not clear why baseline case compares equal dosage of two drugs.</td>
</tr>
</tbody>
</table>

The conclusion to be drawn from the Hyde study is relatively straightforward; zuclopenthixol acetate IM was found to be more cost effective than haloperidol IM. The interpretation of the Laurier study is less so. There are some points that need clarification:

1. The distribution of the number of injections required implies that the expected number of injections per incident is 1.93 for zuclopenthixol acetate IM and 1.97-2.05 for haloperidol IM; i.e. they are about the same. Given that the frequency of injections is much higher for haloperidol IM, this implies that patients given haloperidol IM reach the point at which they need no further injections much earlier on than those given zuclopenthixol acetate IM. The abstract and introduction of the paper mentions that zuclopenthixol acetate IM can be administrated “once every two to three days” as opposed to “more than once daily” for haloperidol IM. This suggests that an average course of treatment (consisting of two dosages of either drug) would take four-six days with zuclopenthixol acetate IM while it will be over within a day with haloperidol IM.

2. However, this is in stark contrast to what is reported in the paper as the results of the review of the trial literature, where effectiveness of the two drugs are concluded to be comparable. None of this is discussed in the paper.

3. It may be possible that the patient population and/or the practice pattern of the two sources (trial literature for zuclopenthixol acetate IM and primary data for haloperidol IM) were entirely different.

4. Given that the average dosage per injection for zuclopenthixol acetate IM is much larger (five times in the Hyde study, possibly 10 times or more in the Laurier study), it is highly misleading that the incremental cost of zuclopenthixol acetate IM against
haloperidol IM is reported for the same 50mg dosage for both (and then for 100mg of zuclopenthixol acetate IM against 50mg of haloperidol IM). Combined with the expected number of injections per incidence of two derived above, the implied dosage per incidence is 100-400mg for zuclopenthixol acetate IM and 14-24mg for haloperidol IM. A more appropriate comparison may well leave no scope for cost savings by zuclopenthixol acetate IM.

Assuming the number of injections are correct, the conclusion to draw from the Laurier study is that zuclopenthixol acetate IM is less cost effective than haloperidol IM; it takes four to six times longer to work, and rarely leads to cost savings. On the other hand, taking the effectiveness reviews to be correct, the conclusion to draw still remains that zuclopenthixol acetate IM is less cost effective than haloperidol IM; the two drugs are comparable in terms of effectiveness, but costs are (likely to be) higher for zuclopenthixol acetate IM under more realistic dosages. Both contradict the conclusions of the Hyde study. Since the Laurier study does not report the breakdown of the costs, the source of this contradiction is not clear.

9.6.3. The relevance of the evidence to the present guideline

Firstly, the conclusion of this review for the GDG is that the two economic evaluation studies report contradicting results regarding the cost effectiveness of zuclopenthixol acetate IM relative to haloperidol IM. Therefore, the GDG must decide how much relative weight to give to these two studies. For consideration are the following points: neither is based on randomised control trials, and both have small sample sizes (where relevant). The advantages of the Hyde study are: it is UK-based, all the data are collected in one institution and therefore is more consistent, and the patient population and the circumstance of the study intervention are probably more closely related to that of the guideline. The disadvantages of this study are that there is no explicit discussion of the equivalence of the two drugs in terms of effectiveness, and it is based in a PICU environment, so the results may not be generalisable to other environments. The advantage of the Laurier study is the sensitivity analysis, whilst its major disadvantages are the inconsistency between points (1) and (2) above, and that the population and circumstance of the intervention may be relatively less relevant to our context.

Secondly, the review on clinical effectiveness has concluded that zuclopenthixol acetate IM cannot be recommended for use in rapid tranquillisation under normal circumstances.

Thirdly, zuclopenthixol acetate versus haloperidol is not the only pair for which there is effectiveness evidence. Thus, the contribution of the above evidence to the drafting of recommendations is not very straightforward. The relative cost effectiveness of various drugs (and dosages) used for rapid tranquillisation will depend on the following items:

(a) cost of drug acquisition (and dosage and frequency)
(b) time cost of administering the drug (and frequency)
(c) time cost of nursing the patient
(d) cost of controlling for short-term side effects
(e) cost of treating longer-term side effects
(f) effectiveness of the rapid tranquillisation
(g) short-term side effects  
(h) long-term side effects.

Hyde and Harrower-Wilson (1996) report a breakdown of costs associated with violence and aggression in a PICU environment in the UK. The results indicate that regarding rapid tranquillisation (a) is much smaller compared to (b) and (c), which jointly make up a large proportion of the cost. This is supported by both of the economic evaluation studies reviewed above*, and Ricard et al. (1999) is also in agreement with this; (e) and (h) are important and should not be ignored. If there are no studies addressing these, they should still be taken into account for drafting the GDG recommendation.

(*) The Laurier study reports that cost of basic hospital stay account for 86-87 per cent of total costs for both zuclopenthixol acetate IM and haloperidol IM, followed by nursing costs. In our current context, basic hospital stay can be ignored, since this is not affected by the incidence of violence or the management intervention of choice.

### 9.7 Training

The health economics literature search identified four papers on staff training, summarised below. Two were irrelevant, and none were economic evaluations.

<table>
<thead>
<tr>
<th>Category</th>
<th>Environment / staff training.</th>
<th>Environment / staff training.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population/country</td>
<td>Violent patients in general hospital / Australia.</td>
<td>Mental health centre line level staff (n = 22) / US</td>
</tr>
<tr>
<td>Intervention</td>
<td>Violence management team: six staff on call (one doctor, one nurse, four orderlies); special training; verbal placation, physical restraint, sedative medication.</td>
<td>‘extended care ward’, severe mental illness, not developmental disability, post 60-day acute phase).</td>
</tr>
<tr>
<td>Outcome measure</td>
<td>282 calls in 44 months.</td>
<td>Interactive staff training; “to build cohesion among line-level staff members by having them work together to make active decisions about the social learning program [for patients: for example, incentive programs and social skills training programs].”</td>
</tr>
<tr>
<td>Cost measure/year</td>
<td>None.</td>
<td>Staff and patient participation in social learning programs (both increased).</td>
</tr>
<tr>
<td>Comments</td>
<td>Incidents largely associated with organic mental disorders, i.e. health problem, not security/police issue. No details of training given. Population/setting irrelevant. Not evaluation.</td>
<td>Number of physical restraints and aggression related incidents (decreased).</td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Category</th>
<th>Staff training.</th>
<th>Staff training.</th>
</tr>
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<tbody>
<tr>
<td>Population/country</td>
<td>Mental health centre line level staff (n = 22) / US</td>
<td>Mental health centre line level staff (n = 22) / US</td>
</tr>
<tr>
<td>Intervention</td>
<td>Interactive staff training; “to build cohesion among line-level staff members by having them work together to make active decisions about the social learning program [for patients: for example, incentive programs and social skills training programs].”</td>
<td>‘extended care ward’, severe mental illness, not developmental disability, post 60-day acute phase).</td>
</tr>
<tr>
<td>Outcome measure</td>
<td>Staff and patient participation in social learning programs (both increased).</td>
<td>Interactive staff training; “to build cohesion among line-level staff members by having them work together to make active decisions about the social learning program [for patients: for example, incentive programs and social skills training programs].”</td>
</tr>
<tr>
<td>Cost measure/year</td>
<td>None.</td>
<td>Staff and patient participation in social learning programs (both increased).</td>
</tr>
<tr>
<td>Comments</td>
<td>No evaluation.</td>
<td>No evaluation.</td>
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<tr>
<th>Category</th>
<th>Staff training.</th>
<th>Staff training.</th>
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</thead>
</table>
Intervention: Competency-based treatment. “Psychologists design behavioural protocols and can train technical, nursing and other staff in observing behaviour, recording precise data, and responding appropriately to maladaptive behavior.”

Outcome measure: “Psychological interventions reduce dangers from aggressive patients and reduce both staff and patient injuries. […] Active programming reduces the need for restrictive procedures and overall patient resistance by utilizing behaviorally sound principles involving patient participation.” No reference given.

Cost measure/year: None.

Comments: No evaluation.


<table>
<thead>
<tr>
<th>Category</th>
<th>Staff training.</th>
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<tbody>
<tr>
<td>Population/country</td>
<td>Two patients with concurrent borderline and dependent personality features / psychiatric hospital / US.</td>
</tr>
<tr>
<td>Intervention</td>
<td>Behavioural interventions.</td>
</tr>
<tr>
<td>Outcome measure</td>
<td>Description of case history.</td>
</tr>
<tr>
<td>Cost measure/year</td>
<td>None.</td>
</tr>
<tr>
<td>Comments</td>
<td>Not relevant. No evaluation.</td>
</tr>
</tbody>
</table>

### 9.8 Ethnicity, gender and other special concerns

The following four papers mention race and/or sex as a background characteristic, while none were economic evaluations. These are already summarised elsewhere in this appendix. There were no papers looking at disabilities.


### 9.9 Staff and service user perspectives

The following seven papers mention service user or staff attitudes and views, but none are economic evaluations with these as the outcome.


9.10 Accident and emergency settings

There were two papers that refer to A&E, both of which address rapid tranquillisation. The reference to A&E is because that was where the patients were recruited, and not because the papers address the issues of management of violence in the A&E environment in particular. Thus, neither paper is reviewed for this topic. The two papers are:


9.11 Conclusion

To conclude, very few economic studies relevant to this guideline were identified, and the only two that were found on rapid tranquillisation were on a drug that would not be recommended for routine use based on clinical reasons (zuclopenthixol acetate). Furthermore, since many of the recommendations in this guideline are related to issues of human rights and/or less tangible non-health benefits, which are very difficult to model, no economic modelling was employed.

9.12 Ordered papers


### 9.13 Cost effectiveness of life support training

Q1. Cost benefit analysis for introducing automatic external defibrillators into all wards/environments in which rapid tranquillisation, restraint and or seclusion is used.

Q2. Cost benefit analysis of insisting that all those involved in rapid tranquillisation are qualified at ALS entry level and that, at all times, someone on the ward has full ALS training.

#### Key assumptions

Resuscitation Council (UK) acknowledges that ALS “is intended primarily for those health care professionals who attend cardiac arrests frequently […] It is difficult to justify the provision of a two to three day ALS course for health care professionals who would not expect to put these skills and
comprehensive knowledge to use “ and instead promotes ‘immediate life support (ILS)’ training (Soar et al. 2003). This takes a one-day course at the initial instance, and then half-day revalidation courses every 12 months. The below analysis drops ALS and assumes the ILS revalidation course at a charge of £100, and £50 for sensitivity analysis. ILS includes AED training.

There is no evidence regarding the cost-effectiveness of ILS in psychiatric wards. In order to estimate the incremental survival due to ILS over BLS, the relevant evidence include:
- A study on nurse defibrillation for in-hospital cardiac arrest with ventricular fibrillation or pulseless ventricular tachycardia (VF/VT) reports a non-significant increased discharge rate of 14 per cent (Coady 1999).
- A study on in-hospital cardiac arrest with ALS reports that discharge rate of non-VF/VT cases was 6 per cent (Gwinnutt 2000). The implication is that the increased survival rate attributable to ALS has a ceiling at this level.
- The proportion of cardiac arrest with ventricular fibrillation ranges from 30 per cent to 50 per cent of all cases (Gwinnutt et al. 2000; Woollard 2001).
- Most cardiac arrest caused by physical interventions are likely to be preceded by respiratory arrest, and may have a high proportion of non-VF/VT cases. Some drugs used in rapid tranquillisation may lead to VF/VT. But there are no data on this.

Pulling all this together, the analysis below assumes an increased survival rate due to ILS over BLS of 10 per cent, and 12 per cent and 15 per cent for sensitivity analysis.

Also of importance is the incidence rate of cardiac arrests in the relevant environment. Again, there are no data. The analysis below assumes an arbitrary annual incident rate per bed of 5 per cent. In a ward of 20 beds, this will mean 0.1 incidents per year, and 0.7 incidents over a seven-year period (which is the life expectancy of AEDs). To simplify the calculations, it is assumed that over the seven-year time horizon there will be 0.7 of a case at year four. Sensitivity analyses use incident rates of 0.12 and 0.15.

A small proportion of patients may survive with brain damage, and stay in nursing care for years. An arbitrary rate of 1 per cent is used to account for this happening.

Summary of model
- Time horizon: life expectancy of AED [seven years]
- Baseline: all nursing staff has BLS training, but no ILS/AED training.
- A ward with 20 beds.
- A ward with 30 staff on the rota [@£20K pa]
- Increased survival rate with ILS (and AED) above BLS [10 per cent]
- Survival [30 years in full health for 99 per cent; 10 years with brain damage for 1 per cent]
- Incidence per ward over seven years [0.7; at year four]
- Discount rate for health benefits [3 per cent]
- Purchase price of AED (and other relevant equipment) [@£3,000]
- Cost of ILS revalidation training [@£100; once 12 months; half-day sessions]
- Medical costs post resuscitation per year based on Walker et al. (2003).
  - A&E attendance [@£46], coronary care [1.4 days @£612], general ward [4.2 days @£234].
- Cost of nursing home care for those with brain damage
  - nursing home bed [@£300 a day]; QOL = 0; LE(a) = 10 years
- Discount rate for costs [3 per cent]

Results under alternative scenarios (present value)
### Conclusions

Cost per QALY of ILS training with AED under scenario 1 is around £23,800. Sensitivity analysis shows that this may be cost effective (i.e. cost per QALY of £20K or less), if one or other of the factors are favourably different from scenario 1.

Scenario 5 suggests that ALS training (where cost of training will be more than twice ILS) is highly unlikely to be cost effective.

### References


## Appendix 10:

### Quality criteria for main study designs

<table>
<thead>
<tr>
<th>Systematic reviews</th>
<th>Tick if 'yes'</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adequate search strategy</td>
<td></td>
</tr>
<tr>
<td>Inclusion criteria appropriate</td>
<td></td>
</tr>
<tr>
<td>Quality assessment of included studies undertaken</td>
<td></td>
</tr>
<tr>
<td>Characteristics and results of included studies appropriately summarised</td>
<td></td>
</tr>
<tr>
<td>Methods for pooling data</td>
<td></td>
</tr>
<tr>
<td>Sources of heterogeneity explored</td>
<td></td>
</tr>
</tbody>
</table>

| Randomised controlled trials                                                       |               |
| Study blinded, if possible                                                          |               |
| Method used to generate randomization schedule adequate                             |               |
| Allocation to treatment groups concealed                                            |               |
| All randomised participants included in the analysis (intention to treat)           |               |
| Withdrawals/dropouts reasons given for each group                                   |               |

| Cohort studies                                                                      |               |
| All eligible subjects (free of disease/outcome of interested) selected or random sample |               |
| ≥ 80 per cent agreed to participate                                                 |               |
| Subjects free of outcomes on interest at study inception                            |               |
| If groups used: comparable at baseline                                              |               |
| Potential confounders controlled for                                               |               |
| Measurement of outcomes unbiased (blinded to group)                                |               |
| Follow-up sufficient duration                                                       |               |
| Follow-up complete and exclusions accounted for (≥80% included in final analysis)  |               |

| Case control studies                                                                |               |
| Eligible subjects diagnosed as cases over a defined period of time or defined catchment area or a random sample of such cases |               |
| Case and control definitions adequate and validated                                |               |
| Controls selected from same population as cases                                    |               |
| Controls representative (individually matched)                                     |               |
| ≥ 80 per cent agreed to participate                                                |               |
| Exposure status ascertained objectively                                            |               |
| Potential confounders controlled for                                               |               |
| Measurement of exposure unbiased (blinded to group)                                |               |
| Groups comparable with respect to potential confounders?                           |               |
| Outcome status ascertained objectively                                             |               |
| ≥ 80 per cent selected subjects included in analysis                               |               |

| Cross-sectional/survey                                                              |               |
| Selected subjects are representative (all eligible or a random sample)              |               |
| ≥ 80 per cent subjects agreed to participate                                        |               |
| Exposure/outcome status ascertained standardised way                                 |               |

| Qualitative                                                                         |               |
| Criteria for selecting sample clearly described                                     |               |
| Methods of data collection adequately described                                     |               |
| Analysis method used rigorous (i.e. conceptualised in terms of themes/typologies)  |               |
rather than loose collection of descriptive material)
Evidence of efforts to establish validity (truth value)?
Evidence of efforts to establish reliability (consistency)
Respondent validation (feedback of data/researcher's interpretation to participants)
Interpretations supported by data

<table>
<thead>
<tr>
<th>Studies of diagnosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Independent/blind comparison with a reference ('gold') standard of diagnosis</td>
</tr>
<tr>
<td>Diagnostic test evaluated in an appropriate spectrum of patients (those in whom it would be used in practice) selected consecutively</td>
</tr>
<tr>
<td>Reference standard applied regardless of the diagnostic test result</td>
</tr>
<tr>
<td>Test and reference standards measured independently (blind to each other)</td>
</tr>
<tr>
<td>Test validated in a second, independent group of patients</td>
</tr>
<tr>
<td>Results of the diagnostic study important</td>
</tr>
<tr>
<td>Is the test available, affordable, accurate and precise?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Risk factor studies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eligible cohort of participants</td>
</tr>
<tr>
<td>High participation at baseline and follow up &gt; 70 per cent</td>
</tr>
<tr>
<td>Risk factors conceptually relevant</td>
</tr>
<tr>
<td>Baseline measurement of risk factors</td>
</tr>
<tr>
<td>Reporting of methods, explicit inclusion criteria and demographic information</td>
</tr>
<tr>
<td>Adequate length of follow-up &gt; six months</td>
</tr>
<tr>
<td>Measurement of falls as outcome</td>
</tr>
<tr>
<td>Statistical methods detailed - adequate reporting for data extraction</td>
</tr>
<tr>
<td>Methods of adjustment for confounding reported</td>
</tr>
</tbody>
</table>
Appendix 11:

Critical appraisal of management of imminent violence; clinical practice guidelines to support mental health services

AGREE appraisal tool (carried out independently by two reviewers)

Note: the comments that are underlined in this appraisal have been added following the subsequent receipt of archived material.

Publisher: Royal College of Psychiatrists, London. Developed by: Royal College of Psychiatrists

<table>
<thead>
<tr>
<th>Scope and purpose (domain 1)</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The overall objective(s) of the guideline is (are) specifically described.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Comments: The aims of the project are clearly presented (p7). Further information relating to the methodology and scope of the guidelines is also reported in detail.</td>
<td>4</td>
<td></td>
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<tr>
<td>2. The clinical question(s) covered by the guideline is (are) specifically described.</td>
<td></td>
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</tr>
<tr>
<td>Comments: The clinical questions were formulated as “…a set of general hypotheses for each topic” (p22). These hypotheses were based on a series of systematic reviews undertaken for the project.</td>
<td>4</td>
<td></td>
<td></td>
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<tr>
<td>3. The patients to whom the guideline is meant to apply are specifically described.</td>
<td></td>
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<tr>
<td>Comments: The target populations and the populations that are excluded from the guideline are specifically described (p18).</td>
<td>4</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Stakeholder involvement (domain 2)</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>4. The Guideline Development Group includes individuals from all the relevant professional groups.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Comments: All relevant professional groups were included in formulating the guideline recommendations.</td>
<td>4</td>
<td></td>
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<tr>
<td>5. The patients’ views and preferences have been sought.</td>
<td></td>
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<tr>
<td>Comments: Patients’ views were sought through primary research (for example, focus groups) and as members of both the work group and the external review panel.</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. The target users of the guideline are clearly defined.</td>
<td></td>
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</tr>
<tr>
<td>Comments: The target users of the recommendations are reported. These include users, purchasers, managers and clinicians in the mental health services (p18).</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. The guideline has been piloted among target users.</td>
<td></td>
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</tr>
<tr>
<td>Comments: The external review panel (see Appendix 5; p107-8) provided comments and input in relation to the development of the guideline recommendations. There is no reference to a formal piloting of the document. The document was piloted.</td>
<td>4</td>
<td></td>
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### Rigour of development (domain 3)

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<tbody>
<tr>
<td>8. Systematic methods were used to search for the evidence.</td>
<td>4</td>
<td>3</td>
<td>2</td>
</tr>
</tbody>
</table>

**Comments:** The guideline reports that systematic reviews were completed for each of the topics, an overview of the search strategies is provided and a flow diagram is provided indicating the number of articles retrieved in the search for research evidence. However, the search terms used are not provided and the number of databases searched is inadequate. Searching archives indicates that many areas were thoroughly searched - others less so - weaknesses are acknowledged. Search terms have been located and searches kept.

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<tbody>
<tr>
<td>9. The criteria for selecting the evidence are clearly described.</td>
<td>4</td>
</tr>
</tbody>
</table>

**Comments:** The inclusion and rating of evidence is reported. The authors report that they were over-inclusive in the evidence sift, that consideration was given to methodological characteristics and they have also provided a table of research study designs that were included. A critical appraisal tool was used to evaluate all articles - copies of these have been kept. Notes on all excluded studies are available.

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<tbody>
<tr>
<td>10. The methods used for formulating the recommendations are clearly described.</td>
<td>4</td>
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</table>

**Comments:** There is no description of how the recommendations were generated by the work group or how areas of disagreement were resolved. This information can be found in the minutes of the work group and in the methods report.

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<tbody>
<tr>
<td>11. The health benefits, side-effects and risks have been considered in the formulating the recommendations.</td>
<td>4</td>
</tr>
</tbody>
</table>

**Comments:** An overriding consideration of the guideline developers for this guideline is the focus on considering the benefits and risks of the recommendations for this topic.

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<tbody>
<tr>
<td>12. There is an explicit link between the recommendations and the supporting evidence.</td>
<td>2</td>
</tr>
</tbody>
</table>

**Comments:** The authors state that the “…research evidence was insufficient to allow for the generation of evidence-based guideline statements” (p25). The authors further state that the recommendations are based on national guidance documents and the views of patients/carers and health professionals, not specifically on evidence.

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<tbody>
<tr>
<td>13. The guideline has been externally reviewed by experts prior to its publication.</td>
<td>4</td>
</tr>
</tbody>
</table>

**Comments:** The guideline was reviewed by a large and wide-ranging number of organisations with a vested interest in the content of the guideline recommendations.

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<tbody>
<tr>
<td>14. A procedure for updating the guideline is provided.</td>
<td>4</td>
</tr>
</tbody>
</table>

**Comments:** It is reported that the recommendations of the guideline should be updated within five years (p6). The authors have included a ‘research and lessons learned’ section (pp83–85) which suggests the problems and limitations of updating the guideline. This guideline will not be updated as it has been superseded by the NICE guideline.

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<tbody>
<tr>
<td><strong>Clarity and presentation (domain 4)</strong></td>
<td></td>
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<td></td>
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<tr>
<td>15. The recommendations are specific and unambiguous.</td>
<td>4</td>
<td>4</td>
<td></td>
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</tbody>
</table>

**Comments:** Due to the area of investigation for these guidelines, it is not possible to provide a concrete and precise description of management for all situations and population groups. However, the authors have endeavoured to stipulate, through
implementation points associated with each recommendation, the management of certain population groups and the most appropriate steps to be taken for managing situations.

16. The different options for management of the condition are clearly presented.

*Comments:* The guideline has covered the most pressing issues related to the immediate management of violent behaviour.

17. Key recommendations are easily identifiable.

*Comments:* The key recommendations in the guideline are easily identifiable and include implementation points for clarification.

18. The guideline is supported with tools for application.

*Comments:* The guideline is available in a short-form (‘quick reference guide’) for health care professionals and the public. Summary documentation is available through the RCPsych website.

### Applicability (domain 5)

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<tr>
<td>19. The potential organisational barriers in applying the recommendations have been discussed.</td>
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<tr>
<td><em>Comments:</em> Organisational changes that are required to implement the guideline recommendations are discussed (p71).</td>
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<td>20. The potential cost implications of applying the recommendations have been considered.</td>
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<tr>
<td><em>Comments:</em> There is no discussion or evidence review for the cost implications of the guideline recommendations.</td>
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<td>21. The guidelines presents key review criteria for monitoring and/or audit purposes.</td>
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<td><em>Comments:</em> The guideline includes a detailed dissemination and implementation checklists designed to assist in the uptake of the recommendations.</td>
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### Editorial independence (domain 6)

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<tr>
<td>22. The guideline is editorially independent from the funding body.</td>
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<tr>
<td><em>Comments:</em> The document does not include information regarding the funding of the project. However, the document does include information concerning the College Research Units’ Clinical Practice Guidelines Programme. This information is held in the minutes.</td>
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<td>23. Conflicts of interest of guideline development members have been recorded.</td>
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<tr>
<td><em>Comments:</em> There is no information concerning how conflicts of interest were either resolved or recorded. All interests were declared - this information is held in the minutes and archives.</td>
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### Overall assessment

<table>
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<tr>
<th>Recommendation</th>
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<tbody>
<tr>
<td>Would you recommend these guidelines for use in practice?</td>
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</table>
Comments: Although there are several areas that could have improved the quality of document (for example, reporting the systematic reviews, reporting of the consensus development processes and inclusion of cost-effectiveness/cost-impact information), the document represents the most comprehensive form of recommendations for the short-term management of violent behaviour in UK inpatient psychiatric settings.

Note: 4 = strongly agree, 1 = strongly disagree.

<table>
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<tr>
<th>Domain 1</th>
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<tr>
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<td>15/16</td>
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<td>Reviewer 2</td>
<td>12/12</td>
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<td>93.75%</td>
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Appendix 12:

Summary of St George’s report on RCPsych guideline

Executive summary
A set of national clinical guidelines on the management of imminent violence to support mental health services was assessed, using a questionnaire, by six independent appraisers. The assessment was divided between the rigour of the guideline development process, the content and context of the guidelines and their application.

The guidelines scored highly on several aspects of the development process; the search strategy and interpretation of evidence were thorough and comprehensive. However, there was disagreement about the adequacy of the methods used for constructing the recommendations. There was also disagreement about the linkage between the recommendations and evidence. Some appraisers commented that the grading of recommendations was not possible because scientific evidence was not available or too weak. Others noted that the guideline group had acknowledged the limitations of validity for some recommendations due to missing evidence. Nevertheless, the majority thought that on balance, the potential biases had been adequately dealt with. A date for the review of the guidelines had been provided (for example, in five years).

The objectives of the guidelines and the target population had been clearly defined. There was disagreement about the circumstance where exceptions might be made when applying the guidelines and on patient's choice. The recommendations were clearly presented and different options for management were explicit. The health benefits and potential risks had been described, but the agreement between appraisers was weak. There was no estimate of the likely cost or expenditure.

The guideline document had suggested methods for the dissemination and implementation of the guideline and had proposed criteria for monitoring compliance. There was uncertainty that standards and measures of outcome had been defined. The document had identified key elements to be considered by local groups.

Taken from: *The management of imminent violence: A clinical practice health guideline to support mental health services (RCP): Appraisal report*, Health Care Evaluation Unit, St George's Hospital Medical School (1998), 1. [Full appraisal document available on request.](#)
### Appendix 13:

**Critical appraisal of Breaking the circles of fear: a review of the relationship between mental health services and African and Caribbean communities**

**AGREE appraisal tool (carried out independently by two reviewers).**

*Note:* the comments underlined in this appraisal are in addition to the comments from the original AGREE appraisal and have been added for clarification.

**Title of document:** Breaking the circles of fear: a review of the relationship between mental health services and African and Caribbean communities (2002).

**Publisher:** Sainsbury Mental Health Centre London. **Developed by:** Sainsbury Mental Health Centre.

<table>
<thead>
<tr>
<th>Scope and purpose (domain 1)</th>
<th>4</th>
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<tbody>
<tr>
<td>1. The overall objective(s) of the guideline is (are) specifically described.</td>
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<tr>
<td><em>Comments:</em> The aims of the project are clearly presented (p8/14).</td>
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<tr>
<td>2. The clinical question(s) covered by the guideline is (are) specifically described.</td>
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<tr>
<td><em>Comments:</em> The aims appear to be the clinical questions being addressed and are given at the beginning of every chapter. These aims have also been determined by the methodological approach of the co-operative enquiry. (p84) This is more of a report than a guideline so this question is not entirely relevant.</td>
<td></td>
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<td>3. The patients to whom the guideline is meant to apply are specifically described.</td>
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<td><em>Comments:</em> The target population is specifically described throughout.</td>
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<tr>
<th>Stakeholder involvement (domain 2)</th>
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<tr>
<td>4. The Guideline Development Group includes individuals from all the relevant professional groups.</td>
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<tr>
<td><em>Comments:</em> There is steering group that manages the project and an advisory group of relevant professionals. Service user participation seems absent from the groups. There seems to have been a great deal of input from service user organisations, but no input from nursing organisations.</td>
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<td>5. The patients’ views and preferences have been sought.</td>
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<td><em>Comments:</em> This is the whole purpose and thrust of the report. (p84). It has been achieved through a variety of means, including focus groups and interviews.</td>
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<td>6. The target users of the guideline are clearly defined.</td>
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<tr>
<td><em>Comments:</em> The target users of the recommendations are reported (p8).</td>
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<td>7. The guideline has been piloted among target users.</td>
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<td>Rigour of development (domain 3)</td>
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<td>8. Systematic methods were used to search for the evidence.</td>
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<tr>
<td><strong>Comments</strong>: This report does not follow a traditional systematic approach, which has probably been deliberate. The overall approach appears to be systematic and thorough (p8/84). This is not a guideline and so it does not search for evidence - it is more of a research-centred report.</td>
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<td>9. The criteria for selecting the evidence are clearly described.</td>
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<tr>
<td><strong>Comments</strong>: The inclusion of evidence and its collection is reported (p84). Quality of evidence and gradings have not been reported. This question is not relevant.</td>
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<td>10. The methods used for formulating the recommendations are clearly described.</td>
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<td><strong>Comments</strong>: They appear to be generated from the key findings. There is no description of how the recommendations were generated by the advisory group but are described as a process of argument based on findings (p74-82). The recommendations are based on the findings of the research. This is apparent.</td>
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<td>11. The health benefits, side-effects and risks have been considered in the formulating the recommendations.</td>
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<tr>
<td><strong>Comments</strong>: This is not directly relevant. The implications are at the policy level with an implementation strategy (p74-82). This question is not relevant to this topic.</td>
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<td>12. There is an explicit link between the recommendations and the supporting evidence.</td>
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<td><strong>Comments</strong>: There is a clear link between the evidence and the recommendations, but the methodology is not as direct and rigorous as the standards expected in a NICE guideline.</td>
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<td>13. The guideline has been externally reviewed by experts prior to its publication.</td>
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<tr>
<td><strong>Comments</strong>: This report does not mention being reviewed by others external to the process. The steering group may have acted as such to the advisory group, but membership overlapped. An advisory group was convened, but it contained members of the steering committee.</td>
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<td>14. A procedure for updating the guideline is provided.</td>
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<tr>
<td><strong>Comments</strong>: No procedure to update is mentioned, however this may not be appropriate. There is an implementation project. This question is not appropriate to the report, which stresses the need for more awareness and research in this area.</td>
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<tr>
<td>Clarity and presentation (domain 4)</td>
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<td>15. The recommendations are specific and unambiguous.</td>
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<td><strong>Comments</strong>: They are clear but general.</td>
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<td>16. The different options for management of the condition are clearly presented.</td>
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</table>
Comments: I am unsure about the relevance of this question to this report. This is not relevant to the topic being considered.

17. Key recommendations are easily identifiable.

Comments: The key recommendations in the guideline are easily identifiable and include implementation. They are clearly laid out at the beginning of the report.

18. The guideline is supported with tools for application.

Comments: Implementation of recommendations given (p10-11, 77-82).

**Applicability (domain 5)**

19. The potential organisational barriers in applying the recommendations have been discussed.

Comments: Organisational changes that are required to implement the guideline recommendations are discussed (p68-72).

20. The potential cost implications of applying the recommendations have been considered.

Comments: There is no discussion or evidence review for the cost implications of the recommendations.

21. The guidelines present key review criteria for monitoring and/or audit purposes.

Comments: Not given in report. Additional information suggests the subsequent implementation project will monitor. This is not done, but would have been useful.

**Editorial independence (domain 6)**

22. The guideline is editorially independent from the funding body.

Comments: While the authors and editor are stated on p7, their organisations are not. The funder is understood to be the Sainsbury Centre and this is represented on both the steering and advisory groups.

23. Conflicts of interest of guideline development members have been recorded.

Comments: There is no information concerning how conflicts of interest were either resolved or recorded.

**Overall assessment**

Would you recommend these guidelines for use in practice?

Comments: This report did not set out to be a guideline and therefore does not adopt the rigorous approach expected. However it is providing guidance targeted at a strategic and national level and intends to implement the strategy via the recommendations proposed. It is highly relevant to the current guideline and therefore the needs to be noted.

Strongly recommend

Note: 4 = strongly agree, 1 = strongly disagree.
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<td><strong>Reviewer 1</strong></td>
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<td><strong>Reviewer 2</strong></td>
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Appendix 14:

THE EXPERIENCES OF BLACK SERVICE USERS IN UK IN-PATIENT SETTINGS IN RELATION TO THE SHORT-TERM MANAGEMENT OF DISTURBED/VIOLENT BEHAVIOUR

FEBRUARY 2005
AUTHORS: LOUISE NELSTROP\textsuperscript{1}, JACKIE CHANDLER-OATT\textsuperscript{1}, JANE COWL\textsuperscript{2}, JOAN FIELD-THORN\textsuperscript{3}, PAULINE ABBOTT-BUTLER\textsuperscript{4}

\textsuperscript{1} National Collaborating Centre for Nursing and Supportive Care, RCNI, Radcliffe Infirmary, Oxford, OX2 6HE. (joint-first authors)
\textsuperscript{2} Patient Involvement Unit (of the National Institute for Clinical Excellence), 71 High Holborn, London, WC1V 6NA.
\textsuperscript{3} Black Orchid, 189c Newfoundland Rd, St Agnes, Bristol, BS2 9NY.
\textsuperscript{4} Footprints UK, Unit 47, Alpha Business Centre, 60 South Grove, London, E17 7NX.
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### CHAPTER 4: HEALTH CARE PROFESSIONAL FOCUS GROUP FINDINGS

#### Background

**4.1 Black experience**
- **4.1.1 Stereotyping**
- **4.1.2 Disrespect/control**
- **4.1.3 Choice/flexibility**
- **4.1.4 Fear**

**4.2 Frustration**
- **4.2.1 System problems**
- **4.2.2 Training/untrained staff**
- **4.2.3 Monitoring**
- **4.2.4 In-patient environment**
- **4.2.5 Concerns outside the scope of this research**

Suggestions for improvements

### CHAPTER 5: CONCLUSIONS AND RECOMMENDATIONS

**5.1 Conclusions**

**5.2 Consensus process**

**5.3 Recommendations and good practice points**

**5.4 Suggestions for future research**

### REFERENCES

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- Appendix 2 Ethnicity review evidence tables - excluded studies
- Appendix 3 Ethnicity review search strategy and search log
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- Appendix 5 Service user participant information guide
- Appendix 6 Health care professional participant information guide
- Appendix 7 Service user focus group discussion guide
- Appendix 8 Health care professional focus group discussion guide
- Appendix 9 Written consent form
Acknowledgements

We would like to thank Black Orchid in Bristol and Footprints UK in Walthamstow for organising and facilitating the focus groups. We would also like to thank all the service users who gave their time and shared some very difficult experiences with us.

We would also like to extend our thanks to the health care professionals who took part in a focus group in London, the content of which is reported in Chapter 4.

In addition, we would like to thank the service users who attended the Guideline Development Group as ‘expert patients’ and whose presentations and discussions echoed much of the material generated by the focus groups.

We would also like to thank the health care professionals who acted as expert reviewers for the systematic review on ethnicity.

Thanks must also go to Liz McInnes, senior research and development fellow at the National Collaborating Centre for Nursing and Supportive Care (NCC-NSC) for her assistance with drafts of this report. We would also like to thank Dr Suman Fernando, Dr Joanna Bennett, Dr Aggrey Burke and Dr Joseph Cortis who reviewed the systemic review of the literature for this study (Chapter 1).

Finally, thanks must go to Yana Richens, whose report Exploring the experiences of women of Pakistani origin of UK maternity services is used as a template for this report (www.yaranichens.com) and who commented on drafts of this work.
Summary

This aim of the study was to explore the in-patient experiences of two different groups of black service users, one in London and one in Bristol, in relation to the short-term management of disturbed/violent behaviour. Further information on black service users’ treatment within psychiatric in-patient settings in relation to the short-term management of violence was sought from a countrywide group of health care professionals and experts with a special interest in this area. The objectives of the study were:

1. To describe black service users’ experiences of the short-term management of disturbed/violent behaviour in psychiatric in-patient settings.
2. To describe the experiences and views of health care professionals with experience of working with black service users, in relation to the short-term management of disturbed/violent behaviour in psychiatric in-patient settings.
3. To draw up recommendations to improve psychiatric in-patient services.

A systematic review of the literature was undertaken before the study was conducted. Very little evidence emerged on the experiences of black service users in relation to the short-term management of violence in psychiatric in-patient settings. Therefore, two focus groups were set up to provide some primary data to feed into the guidance in relation to the needs of service users from ethnic minority groups. Bristol and London were chosen to capture the views of black service users from different communities.

In Bristol, the black community is diverse and long established, and many black service users are constantly in and out of hospital. In London, the focus group considered the experiences of African-Caribbean service users, all of whom were ‘survivors’. Black service users, particularly African-Caribbean service users, were specifically targeted, since anecdotal evidence has suggested that their experience of in-patient settings is less positive than that of other service users. A further focus group, made of health care professionals with experience of working with black service users, was also set up. Data was analysed using content analysis. The findings suggest that participants have many negative experiences of the interventions used in psychiatric in-patient settings for the short-term management of violence.

A further focus group was run with health care professionals from across the UK who have a special interest in black service users. This group also considered the short-term management of violence in psychiatric in-patient settings. Data was again analysed using content analysis. The findings suggest that participants also held negative views about black service user experiences of the interventions used in psychiatric in-patient settings for the short-term management of violence.

In addition to running focus groups, black service users attended meetings, gave ‘expert patient’ presentations to the Guideline Development Group (GDG) and joined in the discussion of recommendations, alongside the service users on the GDG.

---

5 A number of recent studies have shown that black service users have very negative experiences of mental health services in the UK: F Keating et al., Breaking the circles of fear: a review of the relationship between mental health services and African Caribbean people (London: Sainsbury Centre for Mental Health, 2002); Y. Chrisissie, Black spaces project (London: Mental Health Foundation, 2003); Footprints UK, Tell it like it is: Giving a voice to African and Caribbean mental health service users (London: Footprints UK, 2003).
All this information was also used to help generate recommendations for improving black service users’ experiences of the short-term interventions used to manage disturbed/violent behaviour in psychiatric in-patient settings. The key issues that emerged from the focus service user groups were: powerlessness and voicelessness and inappropriate treatment and control; the key issues that emerged from the health care professionals focus group were: black experience and frustration.
Chapter 1: Systematic review

1.1 Background

The David Bennett Inquiry (2004) highlighted the importance of considering the needs of black and minority ethnic groups, when managing disturbed/violent behaviour in the short-term. For the purpose of this guideline, the following definition of minority ethnic group has been adopted:

**minority ethnic group:** a group which is numerically inferior to the rest of the population in a state, and in a non-dominant position, whose members possess ethnic, religious or linguistic characteristics which differ from those of the rest of the population and who, if only implicitly, maintain a sense of solidarity towards preserving their culture, traditions, religion or language. (F. Capotorti (1985) 'Minorities', in R. Bernhardt et al. (editors) Encyclopedia of public international law. Amsterdam: Elsevier, vol.8, p.385.)

Although not specifically mentioned in the scope, the importance of this area is widely recognised by healthcare professionals (Fernando, 1998) and has been highlighted by a number of high profile inquiries, the most recent of which is the inquiry into the death of David 'Rocky' Bennett, an African-Caribbean service user who died whilst being restrained on a secure unit.

The literature that discusses mental health and minority ethnic groups highlights particular concerns relating to black and African-Caribbean service users. For the purpose of this guideline, the following definition of black, taken from They look after their own, don't they? (DH/Social Service Inspectorate, 1998), has been adopted:

**black:** refers to those members of the ethnic minority groups who are differentiated by their skin colour or physical appearance, and may therefore feel some solidarity with one another by reason of past or current experience, but who may have many different cultural traditions and values.

For this purpose of this guideline, the following definition of African-Caribbean has been adopted:

Of or pertaining to both Africa and the Caribbean; used to designate the culture, way of life, etc or the characteristic style of music of those people of black African descent who are, or whose immediate forebears were, inhabitants of the Caribbean (West Indies). (Taken from Oxford English Dictionary Online).

It is maintained that black and particularly African-Caribbean service users are over-represented within the mental health services in the UK, particularly in forensic settings. A variety of reasons have been advocated, including:

- Prevalence of schizophrenia amongst African-Caribbean service users (Ndegwa, 2000).
• Institutional racism (Sashidharan, 2003).

It is also suggested that recent shifts in Government policy have led to a more punitive approach within mental health services, particularly secure settings, and that young black African-Caribbean men have been made to bear the burden of this altered approach (Fernando et al., 1998). Again it has been asserted that this burden reflects racial stereotyping that regards young African Caribbean men as 'big, black and dangerous' (Prins H, Big, black and dangerous? Report of the Committee of Inquiry into the death in Broadmoor Hospital of Orville Blackwood and a review of the deaths of two other Afro-Caribbean patients, 1993). It is suggested that this stereotyping affects the treatment of African-Caribbean service users within many mental health settings (Littlewood and Lipsedge, 1997).

As a result of the concerns relating to the treatment of African-Caribbean service users, the review in this guideline has given particular attention to the short-term management of the disturbed/violent behaviour of African-Caribbean service users in psychiatric in-patient settings. It has not done so, however, to the exclusion of other ethnic groups.

This review considers three areas, which are covered by scope of the guideline:

• diagnosis, prediction, interventions
• relationship between staff and service users
• provision of services.

1.2 Methods

Search strategies

Search strategies were devised to identify the best available evidence for the interventions and related topics discussed in the guideline (see Appendix 3). It was recognised very early within the process that, in most instances, this evidence would not constitute meta-analyses, systematic reviews or randomised controlled trials (RCTs). Therefore searches were not limited to these study designs.

Where little evidence was available, studies were included in related areas, from which evidence could be extrapolated. Searches were not limited to English language citations

Hand searching was not undertaken following NICE advice that exhaustive searching on every guideline review topic is not practical and efficient (Mason, 2002).

Reference lists of relevant order papers were checked for articles of potential relevance.

The evidence review was sent for peer review in an attempt to identify any further relevant papers.

The databases searched, logs of results and all search strategies can be found in Appendix 3.

Evidence of effectiveness, evidence of harm and cost effectiveness information was sought.
Sifting and reviewing the evidence

Once articles were retrieved, the following sifting process took place:

- First sift: sift for material that potentially meets eligibility criteria on basis of title/abstract by two reviewers.
- Second sift: full papers ordered that appear relevant and eligible or where relevance/eligibility not clear from abstract.
- Third sift: full articles critically appraised and checked by one reviewer. More than 50 per cent of all articles in the guideline were then critically appraised by an independent reviewer as a quality check.

Data extraction

Study appraisal and methodological quality were assessed using checklists designed with assistance from the Centre for Statistics in Medicine at Oxford University. (The quality principles used and the checklists are available from the NCC-NSC on request.) Data was abstracted by a single reviewer and evidence tables compiled. More than 50 per cent of all articles were then subject to a second quality assessment by a second reviewer. Any discrepancies between reviewers were resolved by discussion. Where needed, a third reviewer assisted with decisions on inclusion or exclusion of a study.

The following were extracted where possible (the reporting of many studies sometimes lacked essential detail) and relevant:

- Author, setting, number of participants at baseline and follow-up, methods and details of baseline and outcome measures, results including summary statistics and 95 per cent confidence intervals, and comments made on methodological quality.

Masked assessment, whereby data extractors are blind to the details of the journal, authors etc., was not undertaken because there is no evidence to support the claim that this minimised bias (Cullum et al., 2003).

Data synthesis

All studies were put into evidence tables and summarised using a qualitative narrative approach. No quantitative analysis was carried out for this review. Summary statistics of significance were reported in the evidence tables.

Appraisal of methodological quality

Very limited evidence for each of the review questions listed below was found. The resulting evidence reviews must therefore be viewed as mapping exercises, which aimed to highlight the range of research undertaken (which was often of mixed quality), in order to facilitate informed discussion by the GDG, to assist with deliberations around recommendation formulation and also to identify research gaps. Where a study was particularly weak it was excluded (see Appendix 2). It was considered particularly weak where the number of confounders and flaws were great enough to jeopardise the results. Concerns regarding the quality of individual studies are detailed in the relevant evidence table.
A large range of quality related concerns were commonly found across many of the studies included in these review. These included:

- inappropriately small sample sizes
- inter-rater reliability not always quantified where applicable
- conclusions do not always appear to be supported by a study's results
- methodologies are not always sound - that is, don't adhere to standard processes
- designs do not always appear appropriate - sometimes this is recognised by the authors
- methods of analysis are not always clearly outlined
- under-reporting
- lack of detail about follow-up duration; losses to follow-up and drop-out rates
- descriptions of interventions are not always adequate
- description of how outcomes were measured are not always adequate or are sometimes lacking
- poor reporting.

Where the studies in a review raise other more specific quality concerns, these are mentioned under the evidence summary for each review.

Authors were not contacted about any of the included studies, due to time constraints and the age of many of the studies.

In areas without sufficient evidence, previous guideline material was collated to help facilitate informed discussion by the GDG.

Clinicians and service users were also invited to give presentations on areas without sufficient evidence at GDG meetings to facilitate discussion.

The GDG then considered the evidence statements derived from the evidence reviews and used formal consensus methods (see Chapter 5) to derive recommendations and good practice points, particularly for those areas where research evidence was lacking or weak, drawing upon their own and others clinical expertise and experience, as necessary.

**Evidence grading**

Once individual papers had been assessed for methodological quality and relevance in terms of the clinical questions, they were graded according to the levels of evidence currently used by NICE.

**A**

At least one meta-analysis, systematic review or RCT rated as 1++, and directly applicable to the target population, or a systematic review of RCTs or a body of evidence consisting principally of studies rated as 1+, directly applicable to the target population and demonstrating overall consistency of results. Evidence drawn from a NICE technology appraisal.

**B**

A body of evidence including studies rated as 2++, directly applicable to the target population and demonstrating overall consistency of results, or extrapolated evidence from studies rated as 1++ or 1+. 

Page 11 of 107
1.3 Objectives

Two review questions were identified and used to inform all searches (see Appendix 3 for search strategies, databases searched and search logs).

- Does race/ethnicity of a service user or staff member make a difference to how they are treated when they are involved in a disturbed/violent incident in adult in-patient settings?
- Do staff and/or service users perceive that the race/ethnicity of a service user or staff member makes a difference to how they are treated when they are involved in a disturbed/violent incident in adult psychiatric in-patient settings?

Selection criteria

Types of studies
Systematic reviews to before and after studies. Qualitative studies were also included (evidence level I-IV).

Types of setting
All adult in-patient mental health settings, excluding geriatric and learning disability.

Types of outcome

- Impact of ethnicity on the interventions used for the short-term management of violence in psychiatric in-patient settings.
- Staff and service user perspectives on the impact of ethnicity on the interventions used for the short-term management of violence in psychiatric in-patient settings.
- Bias in treatment or diagnosis, (prevalence/incidence rates).
- Effects of ethnicity/race on service users and/or staff.

1.4 Clinical evidence

One hundred and sixty eight papers were identified by our searches. After sifting for duplicates and papers outside the scope, 41 were ordered. Only 23 of these papers were included; 10
Violence: The Short-Term Management of Disturbed/Violent Behaviour in Psychiatric Inpatients and Emergency Departments Guideline

were excluded. The rest were overviews or outside the scope of the review. There were 13 UK studies and 10 US studies. Some of the US studies are based in psychiatric services for veterans (ex-military), a specialised population. Study settings varied from general acute psychiatric to specialist services - forensic or psychiatric intensive care. (Evidence tables of included studies can be found in Appendix 1. Evidence tables of excluded studies can be found in Appendix 2).

To supplement the evidence base for this review, we also conducted three focus groups, two with black service users and one with health care professionals with expertise in working with black service users, which is the focus of this report.

Included papers covered three broad areas that fall within the scope of the guideline: prediction, interventions and admission. Special review questions were devised to focus the review in each of these areas.

I Prediction

Seventeen studies were identified which addressed these questions. A range of study designs and perspectives were examined making the results difficult to synthesis.

1.a Review question: can disturbed/violent behaviour in psychiatric in-patient settings be linked to ethnicity?

The following studies suggested that black and minority ethnic service users exhibited higher levels of violence toward others than white service users: Commander et al. (1997a), (1997b), Chen et al. (1991); Lloyd & Moodley (1992); Sheehan et al. (1995); Dixon (2000); Chu (1985); Lawson et al. (1984). Six of these were UK studies (Chen et al. 1991; Commander et al. (1997a); Commander et al. (1997b); Lloyd & Moodley 1992; Sheehan et al. 1995; Dixon et al. (2000)) and two were US studies (Chu 1985; Lawson 1984). Four were prospective studies Chu (1985); Lawson et al. (1984); Commander et al. (1997a); Commander et al. (1997b); two retrospective chart reviews (Sheehan et al. 1995; Dixon, 2000), one cross-sectional (Lloyd & Moodley 1992) and one case control (Chen 1991).

The following studies found that levels of violence towards others were not related to ethnicity: Kho et al. (1998) a UK prospective study and Feinstein & Holloway a UK cross-sectional study, (2002). In addition, a qualitative UK study by Morley et al. (1991) found that 53 per cent of service users who were sectioned were not considered dangerous by their relatives.

The following studies suggested that other ethnic groups exhibited higher levels of violence toward others than black and minority ethnic service users: Kho et al. (1998) showed Asian patients to be more aggressive. Lawson et al. (1984) showed whites to be more violent, to make more threats and to commit more self-destructive acts.

Evidence statement

<table>
<thead>
<tr>
<th>Evidence level</th>
<th>Evidence statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>The limited evidence from these studies is conflicting; it is therefore not possible to ascertain if different cultural groups exhibit higher or lower levels of disturbed/violent behaviour than other groups.</td>
</tr>
</tbody>
</table>
I.b Review question: are the tools used to predict disturbed/violent behaviour in psychiatric in-patient settings ethnically/racially biased?

A large number of tools were identified in the prediction evidence review. The majority of these make no mention of testing for racial bias. It must, therefore, be presumed that they have not been tested for racial bias. This is the case for the following tools which were found to indicate that black service users were more likely to be violent than white service users: Chu (1985) using the brief psychiatric rating scale and the Itil-Keskiner psychopathology rating scale.

Hutton et al. (1992) found that the overt hostility scale tended to suggest a greater propensity for aggressive or violent acts amongst black service users than occurred amongst white service users and could lead to an erroneous interpretation, as race was the only variable to emerge as a determinant of overt hostility.

Choca et al. (1990) tested the cultural sensitivity of the Millon clinical multiaxial inventory to assess whether it was culturally fair. This personality instrument has weighted scores to provide different norms for black, white and Hispanic individuals to address potential bias. This study concluded that this test was a useful tool for prediction that takes account of racial bias, however some adjustment is needed to the item and scale levels.

Clinician prediction was also found to be at risk of racial bias: Hoptman et al. (1999) a US prospective study, McNiel & Binder (1995) a US retrospective chart review, and Strakowski et al. (1995) a US retrospective chart review. Minnis et al. (2001) surveyed British psychiatrists to test assessment bias in relation to violence. They suggested that racial stereotyping did not occur at first interview. Silver (2000) illustrates the effect of confounding according to locality of individual’s residence and how this may effect reporting of results of violent incidents. Reubin et al. (1997) suggested that elevated levels of the enzyme creatine kinase could be used as a biological marker to predict aggression amongst African Americans. This finding could not be verified from any other study.

<table>
<thead>
<tr>
<th>Evidence level</th>
<th>Evidence statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>On the basis of the available evidence, it is not possible to determine a ‘gold standard’ tool for the prediction of disturbed/violent behaviour appropriate for use amongst different ethnic groups.</td>
</tr>
</tbody>
</table>

II Interventions

II.a Review question: is intervention choice for the short-term management of disturbed/violent behaviour ethnically/racially biased?

One study specifically addressed this question.

Chen et al. (1991) found a significantly higher number of African-Caribbean service users were given high dose neuroleptic medication for disturbed/violent behaviour than service users from other ethnic backgrounds. (p<0.03).
Evidence statement

<table>
<thead>
<tr>
<th>Evidence level</th>
<th>Evidence statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>There is insufficient evidence (one study) to assess whether African-Caribbean service users are given rapid tranquillisation more often than service users from other ethnic backgrounds.</td>
</tr>
</tbody>
</table>

II.b Review question: do staff and/or service users perceive that the race/ethnicity of a service user or staff member makes a difference to how they are treated when they are involved in a disturbed/violent incident in adult psychiatric in-patient settings?

Three studies examined attitudes of service users towards violence management in psychiatric in-patient settings in relation to ethnicity.

A qualitative UK study (Secker & Harding 2002), proposed key themes arising from interviews with African-Caribbean service users relating to loss of control, experiences of racism and relationships with staff. Relationships with staff are very rarely experienced as positive.

A prospective UK study (Commander et al., 1997a), found that Asian and white service users are significantly more satisfied with in-patient treatment than black service users.

A UK descriptive survey (Wilson and Francis, 1997), found that African-Caribbean service users and African service users felt misunderstood as a consequence of being feared, ignored or stereotyped.

No studies were identified which examined staff perspectives on race/ethnicity in relation to the use of the interventions considered in this guideline for the short-term management of disturbed/violent behaviours in psychiatric in-patient settings.

Evidence statement

<table>
<thead>
<tr>
<th>Evidence level</th>
<th>Evidence statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>The limited evidence base suggests that black/ethnic service users perceive that there is racial/ethnic bias in staff choice of intervention for the short-term management of disturbed/violent behaviour in psychiatric in-patient settings. Staff-service user relationships, and feelings of being stereotyped, ignored and afraid are key areas of concern for this group.</td>
</tr>
<tr>
<td>4</td>
<td>There is evidence from focus groups that staff perceive there to be racial/ethnic bias in choice of intervention for the short-term management of disturbed/violent behaviour in psychiatric in-patient settings.</td>
</tr>
</tbody>
</table>
III Admission

III.a Review question: are admission procedures ethnically/racial biased?

Commander et al. (1997a) mapped the pathways to admission for three ethnic groups (black, white and Asian). This study found that black service users were less likely to be receiving care from a health care professional prior to admission and that two-thirds of admissions involved the police.

Involvement of the police was examined in two studies, both from the US. Morley (1991) identified the role of police in admissions to hospital for African-Caribbean service users experiencing psychotic symptoms. Commander et al. (1997a) noted that two-thirds of African-Caribbean service user admissions involved the police and that the admission of Asian service users also had a higher level of police involvement than the admission of white service users. These are both US studies and it is difficult to generalise from them to the UK population.

<table>
<thead>
<tr>
<th>Evidence level</th>
<th>Evidence statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>The limited evidence suggests that black service users may be likely to have some level of police involvement during the admission process. However, the evidence is insufficient to allow generalisations to be made.</td>
</tr>
</tbody>
</table>

No studies containing relevant economic data were found.
Chapter 2: Methods

2.1 Aim

The aims of the study were twofold:

- To listen to the experiences of black service users in relation to the short-term management of violence in two different settings, Bristol and London. In London, the group was made up entirely of African-Caribbean service users.
- To listen to the views and experiences of health care professionals with experience of working with black service users, in relation to the short-term management of violence across a variety of settings.

2.2 Objectives

The objectives of the study were:

- To describe black service users’ experiences and views of the short-term management of disturbed/violent behaviour in psychiatric in-patient settings.
- To describe the experiences and views of health care professionals with experience of working with black service users, in relation to the short-term management of disturbed/violent behaviour in psychiatric in-patient settings.
- To draw up recommendations to improve psychiatric in-patient services.

2.3 Methods

The framework for the design and analysis of this report was taken from Richens (2003). Richens used focus groups to gather sensitive information from Pakistani women who had recent experience of the maternity services in the UK. Focus groups are commonly used to collect information or investigate individual responses to different situations or policy initiatives, particularly those that are of a sensitive nature (Gebich 1999). They are particularly useful for encouraging participation from people who are reluctant to be interviewed on an individual basis or who feel they have nothing to contribute, as well as for tapping into a given cultural context (Kitzinger 1995). Richens’s work further confirms the findings of Hennings et al. 1996; Duff 1999; and Wilkins and Winslow et al. 2002; whose studies illustrate that focus groups are useful and appropriate when working with ethnic minority groups. As Richens demonstrates, focus groups can be used for ‘obtaining rich information within a particular social context’ (Richens 2003:19).

2.4 Design

Following Richens (2003), we taped and transcribed each focus group. We then treated the transcribed manuscript as a text for analysis. As in Richens (2003), we used content analysis, as outlined in Burnard (1991), to generate a number of high and low order themes from each of the texts. The thematic overlap from the two focus group texts was such that we merged these to create one set of high and low order themes. The text generated from the health care professional focus group was treated separately, and unique high and low order themes were derived.
2.5. Ethical considerations

The service user focus groups were conducted as a consultation exercise by two black advocacy organisations. These organisations recruited participants for the focus groups and a member acted as the lead facilitator for each group. Therefore formal ethical approval was not sought. However, in order to safeguard the needs of the participants a number of measures were put in place.

Firstly both these organisations offered additional one-on-one discussions with any participant who wanted to further explore issues raised by the focus groups. In addition, prior to the focus groups, each participant received an information leaflet that outlined the topics that would be discussed. This was supported by verbal information from the advocacy organisations. Despite the sensitive nature of the topic, participants had to be turned away. All participants were also asked to give prior written consent for the focus groups to be taped, transcribed and used in a report. Participants were informed that all information received would remain confidential and were reassured that any care and future treatment would not be affected as a result of their participation. Participants were also asked to respect the confidentiality of other participants. Confidentiality was further safeguarded by participant validation of the findings.

Once analysed, the focus group findings were circulated to the participants in the format of a written report. All participants were enthusiastic about the report and the approach taken. No participant wanted anything removed from the report; rather the report generated further discussion of the topic, in which the participants confirmed that the flavour of the report reflected their experiences. Validation of this nature ensures that the researchers’ interpretation reflects the views of participants and that the research does not yield misleading or inaccurate conclusions about the study (Murphy et al. 2002). The participants stated that they found the focus groups and validation discussions valuable. Participants were eager that the findings generated by the focus groups should be disseminated. A small non-incentive gift payment was given out by the advocacy organisations after the focus groups to all participants. The same process was followed for the health care professional focus group, although no payment was given, only expenses were paid. A copy of the consent form used can be found in Appendix 9.

2.6. Sampling, eligibility and recruitment

Quota sampling was used to select participants for the two service user focus groups. Richens notes that Bowling defines this approach as:

a deliberate non-random method of sampling, which aims to sample a group of people, or setting, with a particular characteristic (Bowling 2002:380 cited in Richens 2003).

All participants came from black and African-Caribbean communities and had direct experience of the interventions for the short-term management of disturbed/violent behaviour in psychiatric in-patient settings being considered in the guideline. In London, all the service users were African-Caribbean. In Bristol, all belonged to the black community that is situated in and around St. Paul’s.

A snowballing technique was used to select the health care professionals for the other focus group. The process started with the GDG and was continued with the experts who were
nominated by the GDG. All participants had some expertise with black service users in psychiatric in-patient settings.

No participants were deliberately excluded from any focus group. A full description of the characteristics of the participants is given in section 2.7.

Prior to commencing the focus groups, information leaflets and consent forms were sent to the two service user organisations several months in advance to distribute to potential participants. This material received a positive response.

Participants were paid travelling expenses, provided with lunch and were also given a small payment, as a gesture for attending the focus groups. The money was not used as an incentive, since this was given out at the end of focus group interviews.

Recruiting participants to the study was not difficult. With reference to the two service user focus groups, while in London potential participants had to be turned away, in Bristol the situation was more difficult. Many potential participants in Bristol were constantly in and out of hospital (one participant was accompanied from hospital). The ‘revolving door’ situation in Bristol meant that a large number of participants were invited to be involved in the focus group as it was unclear who would be available to attend on the day. In the end this resulted in an overly large focus group, which is described below in section 2.7. Health care professionals were keen to participate in the focus group held in London.

2.7 Characteristics of participants

2.7.1 London service users
Number of participants:
Age range: 20-55
Sex: six females, three males
Ethnicity: African-Caribbean
Range of settings experienced: secure and acute settings.

2.7.2 Bristol service users
Number of participants:
Age range: 18-60
Sex: two females, 15 males
Ethnicity: African-Caribbean and African-Caribbean born in England. (Most participants classified themselves as ‘black’. Also included Somalian refugees, but see 2.9.1 below).
Range of settings experienced: high, medium secure, forensic, prison, acute, long-term in-patient settings.
(In addition, one female and two male advocates attended).

2.7.3 Health care professionals
Number of participants:
Age range: N/A
Sex: three females, six males
Medical specialism, training, diversity lead, management
Range of settings worked within: forensic, A&E, acute care.

2.8. Role of the facilitator and researcher
Two researchers attended each service user focus group in addition to the facilitator. One researcher was from the National Collaborating Centre for Nursing and Supportive Care; the other from the NICE Patient Involvement Unit. One of the researchers acted as a second facilitator, helping guide the discussion so that the participants only discussed their experiences of the short-term management of violence in psychiatric in-patient settings, rather than other related issues. The other researcher took notes during the focus groups to support the taped analysis and provide any additional relevant information on mood, behaviour and group dynamics. A representative from Black Orchid and Footprints UK acted as the first facilitator for each of the groups respectively.

Two researchers attended the health care professional focus group. One researcher was from the National Collaborating Centre for Nursing and Supportive Care; the other from the NICE Patient Involvement Unit. One acted as the facilitator, the other took notes during the focus group and also acted as a second facilitator.

2.9. The focus groups

2.9.1 Service user focus groups

Twenty-three participants were recruited to the focus group study and they all met the eligibility criteria. Each focus group lasted approximately one-and-three-quarter hours, with a break for lunch. They were held in local settings that were familiar to the participants. The Bristol focus group was conducted in facilities at Black Orchid; the London focus group was held in the Black Persons’ Community Centre in Walthamstow. The London focus group included three men and six women, as well as two researchers and the facilitator. The Bristol focus group included 12 men and two women, as well as two researchers and the facilitator. In addition, three advocates were present and three Somalian refugees. Although the refugees attended and were counted as part of that focus group, they did not participate verbally in the discussion so have not been included in the total number of participants - see Table 2.

Table 2

<table>
<thead>
<tr>
<th>Group</th>
<th>Focus group participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>9</td>
</tr>
<tr>
<td>B</td>
<td>17 (three participants who did not communicate verbally)</td>
</tr>
<tr>
<td>Total:</td>
<td>26</td>
</tr>
</tbody>
</table>

Following Richens (2003), in addition to the facilitator, two researchers were present at each focus group. This meant that one researcher was able to help facilitate the discussion, while the other researcher was free to take notes to assist with the subsequent transcription and data analysis (Krueger and Casey 1998 cited in Richens 2003). This enabled comprehensive transcripts to be produced, by ensuring that unclear sections on the tapes did not result in lost data. It also allowed comparison between researchers for the purpose of verification.

Prior to each focus group, a brief summary of the aims and objectives of the focus group was distributed to participants. The interview schedule and research protocol (Appendix 7) aimed to obtain service users’ views and experiences of:
• interventions use for the short-term management of violence in psychiatric settings (rapid tranquillisation, seclusion, restraint, de-escalation, observation, predication)
• the in-patient environment and its impact on disturbed/violent behaviour
• staff and service users’ relationships in psychiatric in-patient settings and their impact on disturbed/violent behaviour.

Prompts were included in the focus group schedule.

2.9.2 Health care professional focus group

Nine participants were recruited to the health care professional study and they all met the eligibility criteria. The focus group lasted approximately two hours. The focus group was held in the Royal College of Nursing headquarters in London.

Table 3

<table>
<thead>
<tr>
<th>Group</th>
<th>Focus group participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>9</td>
</tr>
</tbody>
</table>

Total: 9

Prior to each focus group a brief summary of the aims and objectives of the focus group was distributed to participants. The interview schedule and research protocol (Appendix 8) aimed to obtain healthcare professionals’ views and experiences of:

• Interventions use for the short-term management of violence in psychiatric settings (rapid tranquillisation, seclusion, restraint, de-escalation, observation, predication)
• The in-patient environment and its impact on disturbed/violent behaviour
• Staff and service users’ relationships in psychiatric in-patient settings and its impact on disturbed/violent behaviour

Prompts were included in the focus group schedule.

2.10. Informed consent

Prior to all focus groups, each participant received a copy of the information sheet. This was supported by verbal information from the service user organisations in the case of the two service user focus groups, explaining the study and what it entailed for participants. Participants were given an opportunity to ask questions and withdraw from the study, prior to being asked to sign the consent form. They were also provided with some basic background information (Appendix 9). Participants were informed that all information received would remain confidential and were reassured that any care and future treatment would not be affected as a result of their participation in the study. One participant in the service user focus group was not completely happy about signing a consent form, since he felt suspicious about what would be done with the information and feared that the focus group would achieve very little. However, after discussion, the participant did sign the consent form and participate in the focus group.

Following Richens 2003, the researchers were aware that consent in research is not a ‘one-off event’. The report of the focus groups was therefore sent to the participants to ensure they felt
happy that it reflected all the issues raised, before being circulated to the GDG. In Bristol, a feedback group was held with participants.

2.11. Confidentiality

Following methods used by Richens (2003), each participant was allocated a number, and each focus group was given a letter of the alphabet as an identifier. All information collected, including cassette tapes, was stored in a locked drawer, which was only accessible to the researchers.

2.12 Data analysis

Using the methods cited in Richens (2003), the data was independently analysed by all three researchers, using the approach to content analysis described by Burnard (1991). This involves generating themes from verbatim transcripts of the focus groups, and then grouping them under reasonably exhaustive categories, in order to explore the issues that were expressed. As Burnard states, the aim of this approach is to:

produce a detailed and systematic recording of the themes and issues addressed in the interviews and to link the themes and interviews together under a reasonably exhaustive category system (Burnard 1991:462 cited in Richens 2003).

The themes were then categorised into high order themes, which reflect a natural clustering of categories, and low order (sub) themes. High order themes are the main themes and these also occurred through a natural clustering of categories; low order themes are sub orders, which relate to the main identified theme (Richens 2003). These categories are presented with supporting illustrations (that is, direct quotations) from the focus groups, in accordance with qualitative data analysis (Kitzinger 1995).

All three researchers met to finalise the high and lower order themes. The completed report was then circulated to the participants as part of respondent validation. Participants were invited to add any further thoughts or feeling to the findings. This process ensured that the researchers' interpretation reflects the views of the participants, and that the research does not yield misleading or inaccurate conclusions about the study (Murphy et al. 2002).

2.13. Limitations of the study

'Group think', (Carey and Smith 1994, cited in Richens 2003) - where stronger members of a group have major control or influence over group dynamics and may hinder the articulation of quieter members’ views - is a danger in focus groups. In one service user focus group, and in the health care professional focus group, incidents of ‘group think’ did occur. However, to a large extent it was prevented by both facilitators and researchers being aware of it, and intervening to ensure that all members were given the opportunity to give their viewpoints and to nominate areas they would like discussed.

A further limitation of the focus group in Bristol was the size of the study and mix of participants. It was impossible to predict how many of the participants who had been invited to
attend would be able to attend on the day. As there is a revolving door situation in Bristol, with service users in and out of hospital, it is difficult to see how we could have overcome this problem. However, it might have been better to invite fewer participants and have run the risk of a very small focus group. Given that only one focus group was taking place in Bristol, it was felt that it would be better to have slightly too many members than very few.

Most participants who attended the Bristol focus group came from the African-Caribbean community, however there were three Somalian refugees who spoke very little English. On reflection, it would have been better to have conducted a separate focus group or structured interviews via an interpreter with these individuals. Funding costs and time constraints made running a separate focus group for these participants impractical. Since these three participants did not speak during the focus group, they were excluded from the final results in group A.

Another issue was the mix of participants. Most participants had been in-patients with a primary diagnosis of mental illness. However, one participant did not have a mental health diagnosis, but had been admitted to a psychiatric institute on a number of occasions for drug-induced psychosis. To ensure a more homogenous group, it might have been better to exclude those with a primary or sole diagnosis of drug abuse.
Chapter 3: Service user focus group findings

Background

The findings below are derived from data collected from 23 participants. See section 2.9.2.

The findings are categorised into high order and low order themes and are presented below in Table 4.

Table 4: Themes arising from data analysis

<table>
<thead>
<tr>
<th>High order themes</th>
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Direct quotations of relevance are included below which support the themes above.

3.1. Powerlessness/voicelessness

Powerlessness/voicelessness was identified as a high order theme. Three low order themes within powerlessness/voicelessness were identified, namely: fear, division/isolation, system problems.

It’s about controlling people [...] it’s keeping them in a zombified state so that their job is made easier and then they feel powerful (participant 1).

It’s like punishment, I’m punishing you and I’m going to show you I have the power to punish you and there’s nothing you can do about it (participant 1).

It’s all about power (participant 1).

My experience is that trained staff were of a violent nature themselves and would always suggest to you, they wouldn’t say it in so many words that we’re going to bend you over for an injection in two minutes but they’d hint that if you don’t do as they say you’ve had it and you haven’t done anything wrong (participant 7).

The participants identified their lack of ability to influence their care or to have their needs met as a major concern affecting their experiences of in-patient care. This related not only to mental health needs, but also physical needs, which were often left unmet. They felt not only powerless in relation to their own care, but also that of other service users. Only rarely was
debriefing received after an intervention, and mostly they were left alone to be cared for by relatives. They were clear about how this treatment made them feel. For example:

> When you got to staff members and say ‘I’m feeling a bit worse’, it’s ‘Go and sit down’, ‘Go away’, they don’t want to hear when you’re actually acknowledging that you are actually feeling worse, they’re not prepared to hear (participant 2).

> A lot of time physical things are going on with people’s bodies and you have to wait for that person to be on death’s doorstep before they diagnose (participant 6).

Participants also expressed distress that complaints were not taken seriously and that there was no proper mechanism for dealing with incidents that arose. This led to a greater sense of powerlessness and voicelessness, and fear that they too might suffer from bad practice. Many of the problems, and their inability to challenge them, were considered to operate at a system level.

> The system is failing us (participant 5).

Participants also felt powerless because they were unable to get any information about the medication they were receiving and details about the length of their stay.

Where regular medication was too strong, they were powerless to get it changed, despite marked side effects:

> I walked around like a zombie, I couldn’t feel any sensation in one of my arms, […] when I went to walk it was like a curved pensioner, couldn’t take pigeon steps (participant 7).

> I couldn’t communicate at all, my family had to bath me (participant 7).

> They give you so much injection, that I was like a jelly fish (participant 3).

> Dribbling, couldn’t speak properly and they kept saying it wasn’t my medication doing to me but my illness. But I didn’t come in like it (participant 3).

> One time I was on such strong medication […] it was like […] when you’re physically disabled (participant 1).

A common perception was that if you asked too many questions you would be branded as a troublemaker.

> I think the thing is the more you’re able to challenge the nursing staff and know your rights, the more likely you are to be threatened and be locked away (participant 2).

One participant compared being an in-patient with being in school, and expressed feeling like a child who had no real voice:
To me it's like school [...] they treat you like you're an idiot coz your like a little school boy, a little pupil and they're the big teacher or whatever and they're the ones in charge and they've got all the authority (participant 17).

Other participants also referred to being treated like babies when medication was given out:

It's like baby time [...] everyone queues up for their medication, there's no confidentiality [...] (participant 2).

This highlights the need for service users to be able to assume some kind of control over their care and to feel certain that they can protect themselves and their rights whilst in in-patient units.

3.1.1. Fear

For many participants fear was an over-riding emotion that summed up their in-patient care. They reported that even when they themselves were not subject to what they perceived as bad practice, they were afraid that they would be next.

One man who couldn't speak English was picked up from the ward [...] the door was slightly ajar, you heard the nursing staff shouting at him and swearing to speak English [...] The nurses was shouting, they were laughing, [...] the injection happened and he did the toilet or whatever [...] which they all laughed about [...] It was terrible, it was quite frightening actually because what it did was made you think (participant 2).

You're going to be next! (participant 5).

Yeah! (participant 6).

Debriefing - or the lack of it - appeared to contribute in a major way to participant's fear. On the few occasions when a member of staff had taken the time to explain to a service user why a particular intervention had been implemented, there was much more acceptance of the practice.

Yeah, well, I got restrained and I came and I asked them, 'Why was it necessary to restrain me?' and they said because I had smashed the television and they thought there was potential that I might get aggressive against someone else [...] which I understood because I could have got violent with someone, you never know (participant 5).

Despite reports of some good nursing practice, however there were far more reports of over use of interventions, such as rapid tranquillisation, restraint and seclusion, without any perception of prior de-escalation being used.

I refused to have my bath and I normally do take my bath, I do not have a hygiene problem [...] this Irish woman, I'll never forget what she did, she got these men to grab me, took off my clothes, and put me in the bath and she made all the men come in and have a look at me (participant 1).
They don’t have any alternative therapy to use, they don’t call up a consultant to talk to
you if you’re distressed or call a nurse, a psychiatrist to talk to you if you’re distressed,
the only things they’ve got to do is restrain you, medicate you or seclusion, something
like that (participant 5).

The only thing they’re really aware of is the medication, they don’t have group work
skills, they don’t have counselling skills, they don’t have listening skills […] I’m not quite
sure what the qualification is for a mental health nurse but I think it must be GCSE
level! (participant 2).

These kinds of practices and attitudes generated fear, as well as anger and mistrust.

Observation was also seen to be of little therapeutic value:

I think in terms of close obs, it doesn’t work […] they’re following you around like a
shadow but there’s no support with that technique […] so in a sense it actually makes
you even more depressed (participant 2).

Another participant reported that the nurses talked to him and some were nice and played
cards, but he still saw observation as a very intimidating procedure.

You sit on one chair and you’d have two nurses who sit and watch you […] You get
some friendly nurses […] and you get some nurses who you can tell just can’t stand
their job and can’t wait ’til it’s time to go home and it’s them ones you’ve got to watch
out for (participant 17).

Participants also reported that it was possible to get a history of being aggressive without
deserving it.

I had to protect myself and it was written on my files that I was ‘aggressive’ (participant
7).

Service users reported that it was not only service users who were afraid. Often staff appeared
frightened of service users, avoiding some people altogether.

I think it’s about their peace of mind, not the peace of me […]. It’s not about the client;
it’s about staff safety (participant 2).

Staff over-use of interventions such as rapid tranquillisation, restraint and seclusion also
appeared to illustrate staff fear.

Now the way I was restrained it lingered on me, I find it very difficult to talk about and
it’s had a lasting effect on me, so far as when I go into hospital for my medication or my
check-up to see the doctor, it really affects me and sometimes I come out all nervy and
fearful of going in the hospital. You know it’s a very serious thing, restraint because it
leaves a lasting effect on you (participant 8).

This fear was also illustrated in ill thought out limit-setting, which provoked service user
aggression.
There was a guy in there [...] it was a friendly environment, he had managed to get the TV and video out of the cupboard. [...] staff [...] came to take the telly back [...] the way they actually approached it was coming in with literally all the staff on the wing and saying ‘We’re going to take the telly back’, which upset everyone. This guy, it set him off, he’s picked up a chair and he just threw it through the window [...] because of the way they actually approached him [...] they’ve come in heavy-handed [...] which I found a bit of a cowardly way of doing it (participant 6).

3.1.2 Division/isolation

One of the major concerns of many participants was that there was a divide between staff and service users - a clear ‘them and us’ mentality, which left many service users feeling isolated and bored. It was also perceived as a catalyst for violence. Staff tended to spend most of their time with other staff members and often shut themselves in the office. They did not respond to service user requests for help or listen to concerns and complaints:

I found that when I was actually in there that the staff tended to do their own thing, like they’d come in and they’d play table-tennis together by themselves, while in the next room one patient would be violent to another patient [...]. They’d all be cooking their own food, they would not really be interacting with the patients and to me it needs to be more friendly, more communication so that you don’t get that kind of divide (participant 6).

Another participant described the time when she asked staff to turn down the television because the noise was keeping her awake:

I was there voluntarily and my room was right next to the lounge where the television was [...] the remote busted and the volume was too loud when it busted so they couldn’t turn the volume down. [...] So they kept leaving the door open so I came out of room [...] and said ‘Could you please keep the door shut? [...] It was my first night in hospital and I’d come in because I was feeling depressed, you know and I need my sleep [...] she wouldn’t make sure the door was kept shut, people were going in and out and it kept waking me up. So I got up and there was a pool table inside the lounge and I picked up a pool ball and I threw it at the television and it busted and then I went back to my room. Anyway they called the police because it was criminal damage. [...] they [police] took me to the seclusion room and told me to strip (participant 5).

When asked to clarify whether black staff were different, some participants stated that it made no difference and that black staff just become part of the culture of the in-patient department:

The black staff are just as bad if not worse, the black nurses, black so-called professionals (participant 1).

Because from my experience they’re not on you’re side just because they’re black and they work there they have adopted the same attitude, the same mentality, the same ignorance, lack of feeling, lack of empathy, they’re just the same, I think they’re actually worse (participant 1).

In fact, in a difficult situation, it was a white nurse who came to this participant’s aid:
When I was restrained it was made up of black people who restrained me and it was a white nurse that came to me and helped me and got me out of the situation that I was in (participant 8).

Another participant suggested that black staff were embarrassed by black service users, because they were culturally too close. However, some participants suggested that it was easier to talk to black staff:

It's different if you've got your own people there (participant 18).

The problem of assuming that all black people share the same culture was also raised. Participants stressed that there are important cultural differences between black Africans and African-Caribbeans:

Now it has been acknowledged that the African communities and the Caribbean communities have very different cultural experiences, and there’s an assumption that because you have black nurses, their culture and their understanding of racism or what they've been through, this culture here, would reflect us and I think that this needs to be taken on board, that with the Black communities there’s a host of different experiences (participant 2).

One of the main concerns of all participants was that staff should listen to service users. There was a perception that some of the lack of listening and lack of contact time was related to a fear of service users because of their ethnicity.

One participant suggested that:

I'm quite a big guy and I was going through a very tough time [...] the staff tended to keep away from me [...] they wouldn't come and talk to me because like they had that kind of stereotypical he's a big, black, violent guy [...] it was very few what actually came and spoke to me and found out what I was about (participant 6).

For all the participants in the focus groups, their over-riding concern was not the ethnicity of the staff or staff mix, but that staff should spend time with service users, get to know them as individuals and gain their trust. However, there were concerns that where this trust had been gained, it should not be abused. One participant recounted how a nurse who had talked to them was able to persuade them to take medication for agitation, but how the side effects were not considered or addressed for several days. The service user felt as though they had been conned:

She said she was going to give me something to calm down and it made me actually didn't want to be inside my body, I could have jumped off the roof, that's how I felt, and they didn't tell me that it was an antidote to my side effect until the next day and I was walking round literally trying to rip my skin off [...] and I wouldn't have taken it if I hadn't felt comfortable with the person [...] (participant 6).

She conned you in a way? (participant 7).
Yeah, she conned me (participant 6).

### 3.1.3. System problems

Many of the problems that led participants to feel powerless and voiceless related to problems that they believed were part of the mental health in-patient system. Participants noted that often the ward atmosphere would be governed by one or two nurses who had particularly authoritarian attitudes, and whose behaviour appeared cruel.

One bad apple can spoil a barrel, so you know what I mean and if you get a few of them on the wing at the same time, working the same shift, you can have absolute hell on the wing (participant 6).

One particular problem was an inability to have complaints about overly authoritarian nurses heard and dealt with in an equitable manner. If any misconduct occurred there was a perception that staff would stick together:

> One bad apple can spoil a barrel, so you know what I mean and if you get a few of them on the wing at the same time, working the same shift, you can have absolute hell on the wing (participant 6).

The problem I've found is, because you're actually in there [...] you tend not be taken seriously about the way you feel about things. [...] Like you could be sitting there absolutely telling the truth about something but they will not take what you're saying as the truth [...] they take the staff's side more. If one of nursing staff says that's what happened, that's what happened and that person could be an absolute bastard (participant 6).

Participants expressed their mistrust in the complaints procedures, which they regarded as next to useless:

> The problem I've found is, because you're actually in there [...] you tend not be taken seriously about the way you feel about things. [...] Like you could be sitting there absolutely telling the truth about something but they will not take what you're saying as the truth [...] they take the staff's side more. If one of nursing staff says that's what happened, that's what happened and that person could be an absolute bastard (participant 6).

Well I've got to say that they don't take any notice, even if they do have a patients' council, you can go to them and talk to them until you're blue in the face because at the end of the day, it's a professional and it's like they all work together [...] okay they might get two weeks off, they might get a slap on the wrist but they go back and do a lot worse (participant 1).

The only time that any real action occurred was when one participant phoned the police. The police believed the service user and the nurse was suspended. However, the suspension only lasted for the duration of this participant's in-patient stay. The participant felt disgusted that more had not been done to address this situation and ensure that similar situations did not arise in the future.

He assaulted me, got suspended for three months, but they took him back, I rang the police because he assaulted me [...] But they took him back, when I was discharged the day after he was back at work [...] It got so far but it didn't go far enough because that particular nurse was the key instigator for most of the abuse that was going on in the ward (participant 7).

Staff attitudes toward black service users were also seen as part of a system problem that required addressing on a system level.
One of the reasons why I think this is really important is that we’re dying, black people are dying in the police cells and the psychiatric hospitals and it’s an issue about black people dying, really and truly it is black people dying in the hospitals and the prison cells. So it’s something to do with not just their experience, it’s to do with a level of racism, so racism on the ward must be quite acute within the institutions themselves (participant 2).

3.2. Inappropriate treatment/control

Inappropriate treatment/control was also identified as a high order theme. This theme has three low order themes, which are: uncaring, black experience, and anger.

A consistent theme arising from the focus groups was the inappropriate utilisation of the interventions used for the short-term management of violence:

They don't try to calm any situation and they not that polite (participant 1).

I agreed to go on the ward just for an overnight stay while they sorted me out [...] when I got there I was told I was to be injected and I refused [...] I wanted to talk to whoever was in charge and I went to the office but by that time I was already in a temper, I know I wouldn’t hurt anyone [...] they got a doctor and he just went ‘inject her’ and they kicked me to the ground and I had bruises on both my legs when I came round (participant 7).

When rapid tranquillisation was used, oral medication was not offered first, it was always given by injection. One participant recalled his anger at being called into the office and finding the syringe laid out on the table ready for use. The response of the nurse to his action of grabbing the syringe confirmed to him that the dose was dangerously high and for control, rather than assisting his agitation:

They called me in for my injection and I seen it on the table, they locked the door behind me and I seen it right in front of me, so I went for ‘em and I picked it up and I said, ‘I'm going to give you this’, and they were like ‘Oh, I don't want to die, I don't want to die’. So I was like, ‘Beg your pardon, what did you say?’ and it was like ‘Oh, I don't want to die, it will kill me’, ‘Then what you giving it me then?’, It was like ‘Oh, it helps you, it helps you’ (participant 23).

One participant recalled being restrained by a large number of nursing staff:

At least six of them are holding you (participant 2).

Yeah, yeah (general agreement).

Depending on how big you are, because it sometimes depends on how big you are, there are at least six people holding you down to inject you, it's not necessary, and they pin you down (participant 2).

Participants suggested that this treatment was dehumanising. Another participant also recalled being injured during restraint:
I just think that there should be something where they constantly train people in restraint, [...] people tend to get hurt, the patient tends to get hurt (participant 6).

One participant argued that nurses like to get a bit rough with service users during restraint:

There's too much nurses, once they get you on the floor, they could do anything with you [...] a lot of them are out just to get you annoyed so they can get a bit rough with the patients, beat up some of them, kick them (participant 23).

Another major concern was the removal of clothes during seclusion. Although the Royal College of Psychiatrists' Guidance, issued in 1998, is clear that clothing should not be removed during seclusion, many participants recorded this as a common practice. This was true of the one service user who was still an in-patient:

When I've been in seclusion, they seem to like to strip off as much clothes as possible, they get a kick out of doing that (participant 1).

One participant noted how police involvement had led to his clothes being removed during seclusion, raising issues about the liaison between police and medical staff in psychiatric in-patient settings:

They took me to the seclusion room and told me to strip, take my clothes off, I was stripped and then halfway through taking my clothes off because the policeman told me to strip my clothes off, he told me to stop as I reached my pants and I was like talking sarcastic ‘Are you sure you don't want to take them off?’ [...] Policeman said grab him, restrain him [...] they grabbed me, threw me to the floor, injected me and like they all backed off and left the room and I passed out for 10 seconds (participant 5).

Other issues of control related to the length of seclusion; not being brought food while in seclusion; not knowing what medication they were being given, even when they asked about it; and lack of confidentiality about medication.

Seclusion I've experienced in a rough way is being forgotten at meal times (participant 7).

But in terms of medication [...] there's no confidentiality, everyone queues up and so if you see someone on methadone, it's a breach, to me it's a breach of patient's human rights because we're not supposed to know what the other person's taking (participant 2).

Some participants stated that staff often wanted to provoke violence in order to have an excuse to use interventions and to have a chance to abuse their authority:

You're eating your meal and they're sort of like over your shoulder trying to make something out of nothing (participant 7).

Some of them was kind of aggressive, one of them told me not to fuck with them and I thought 'who are you talking to' and it made me a bit, it made me a bit more angrier, do you know what I mean? (participant 17).
There was a general feeling that these interventions were used too much. In focus group B there were no participants who had not been subject to restraint during their in-patient care.

One participant stated that he had seen someone killed in an in-patient department. He did not specify their ethnicity:

I've seen a man killed; I've seen a man killed (participant 19).

Several participants saw these problems as part of the system and stressed the role of a few bad nurses. Some participants did stress that they had positive experiences of good nurses, yet on the whole participants suggested that good nurses were few and far between.

Some of the nurses are all right, but they're a minority (participant 17).

The nurses, them that are there, they are very friendly [...] they will bend over backwards to try and help you, but some of them just stay in the office and do office work (participant 19).

Participants stressed that the methods of restraint employed did not differ from those used by the police. One participant recounted being placed in a hog-tied position:

That's the same treatment you get in hospital as well (participant 1).

Other participants recalled the use of pain compliance and its unnecessary use:

When I was in prison [...] I was actually restrained and their techniques tended to be even more kind of violent [...] you'd tend to come out and you can't move your thumb and your wrists feel like their broken, you shoulders feel like they're out of joint and your arms are hanging down like that by the time they've finished with you (participant 6).

They [nurses] pounced on this girl and just bent her leg one way, one leg bent that way, bend one arm that way, bend one arm the other way and inject (participant 5).

I've been bent up into a figure four, with my actual foot behind my knee, and they're actually bending my foot so they're actually pulling my knee joint out of place, and plus they're actually sitting with my head in between their legs, and they're actually sitting on my head so you can't breathe properly (participant 6).

Unless you scream, they are not going to stop bending until you actually start screaming your head off, and if you're screaming your head off like that, you are not going to stop wriggling (participant 5).

For one participant the effects of pain compliance were quite pronounced and caused her further emotional distress when, as a result, she was unable to plait her daughter's hair:

I was restrained by a particular nurse, who had a technique where he put my arm behind my back and crunched my fingers together, until the knuckles swapped over, and wrench it in a different direction, so it would swell up like when you do boxing, and
I couldn’t use my fingers at all [...] I plait my little girl’s hair, so I wasn’t able to plait her hair for her and it was making me more upset (participant 7).

3.2.1. Uncaring

Many of the attitudes of nurses were perceived as uncaring. There was a perception that nurses shut themselves away in the office and did not attend to service user needs. This lack of input endangered service users:

We had a lady who was having real problems, she’d wake up at 7 o’clock in the morning and walk around the ward and she would scream out all her woes [...] until someone’s decided to hit her [...] but they didn’t care, they’d come in the morning, they’d sit down, have coffee, load out their medicine, a bit of breakfast and that was them for the morning and this lady was getting hit consistently or pushed over or abused on the ward [...] and they did nothing (participant 6).

Service users reported how this lack of care led them to take on therapeutic roles. Their involvement in these roles was not seen as an entirely negative experience. However, it was generated by a lack of staff input, and participants felt unqualified and afraid that they would do more harm than good:

We’re going in there for care and support but what’s happens is we’re going in to nurse other people (participant 2).

I found that the users were taking more care of other users in there than the staff were [...] It was like we had our own kind of therapy group going on without staff, and who are we to say that we can do that and if we break someone down we can actually put them back together again? (participant 2)

Service users also recall having to get help for other service users who were in distress:

We were doing more observation than the staff were, we had a girl in there, a young girl, she was about 17 I think and [...] she was taking her clothes off and lifting her skirt up, taking her knickers off [...] and it was us, the users saying ‘Don’t do that’ [...] some of us were a bit better than others, had to go in the meeting and actually stress it to the head doctors [...] and that was what changed it for her (participant 6).

As noted above, a participant recounted how service users were left in a great deal of distress and that staff did not intervene. Nurses were not the only staff who were identified as uncaring; doctors were also noted to ignore participants and not give them time:

I think she was a junior doctor and I got on quite well with her, she kinda admitted me [...] a couple of days later I was feeling quite stressed and I kinda saw her in the corridor and said to her ‘Have you got time to speak to me? I need to speak to someone’ and she just turned round and said to me ‘I’m not your doctor, go and find your doctor’ [...] I ended up smashing a few things up that day (participant 6).

3.2.2 Black experience
Several participants mentioned that they felt misunderstood and that stereotypes affected the way in which staff related to black people. Connected to this, participants mentioned feeling alienated because of their ethnicity and suggested that their ‘black’ experience wasn't recognised:

The black experience….I think the level of [negative] stereotypes on the ward creates a level of violence and tension (participant 2).

Participants noted that large black men (and women) are often avoided. As noted earlier, they related this to the stereotype that young black men are dangerous. One participant commented on the cruel treatment of a large black woman:

On one occasion she was refusing to comply to sitting where they said she had to sit, she said they had no right to tell her where to sit, she just got up and walked out and this nurse grabbed hold of her from behind and was trying to direct her to the chair, now of course she’s going to lash out at him, which she did, and he just set upon her and I set upon him (participant 7).

They suggested that some black people are restrained more often than other service users:

There was a woman that was constantly being picked on with regards to restraint and she was a Jamaican (participant 7).

They also suggested that black service users are more likely to have pain compliance applied on the way to the seclusion room:

Most of the time, if you're black, you're going to get bent and twisted up and carried into seclusion (participant 23).

Participants suggested that some of the humiliating treatment that they received was related to race:

They got about six doctors or nurses, quite a few were men and they got them all to look at me and gave me an injection in the bum and they were all looking. [...] it’s like they're fighting a real mad person who’s really, really strong. That’s just like abuse, they really like to get a look in on somebody’s fat black arse, so to speak, and it’s so degrading, just because I couldn’t sleep, I wasn't doing anything to harm anybody (participant 1).

In addition, they suggested that drugs were the only therapy offered to black people.

What I’m trying to say now is the black community, as soon as we go into hospital we get injections and tablets (participant 8).

This was further reinforced in relation to A&E (see below).

They suggested that black culture was misunderstood as aggressive, confirming stereotypes already held by staff.
A lot of black people are actually quite boisterous and quite loud [...] we’re quite loud when we get together [...] it’s like a misunderstanding of culture and the environment and thing like that, the way we are this is picked up, as like, they’re ready to go off, kind of thing. So you get all the staff coming down and they could be just having a laugh about something (participant 6).

On the ward, African-Caribbean people, we're seen as a lot more aggressive, rather than this is how we culturally are, so we're treated this way (participant 1).

There were also issues of stereotyping concerning black people using marijuana:

They claim so many times I have marijuana-induced psychosis, never touched the stuff, [...] they write on the files, [...] oh she has a history now and she's black (participant 7).

One participant recounted how she was made to give a urine sample for marijuana because she was black, even though she was asthmatic and didn’t smoke:

On one occasion I was asked to give a urine sample, they were saying that I was smoking weed and I don’t smoke, I’m asthmatic [...] they gave me a pot to pee in and they said ‘You're doing it here right now’ [...] there were male nurses there as well [...] they were empowered to stand there and witness me giving a urine sample and they know I don’t smoke, I was the only patient that didn't smoke on the ward and I was the only one with asthma problem and when my asthma puffers had run out they just gave me a replacement (participant 7).

Another participant recalled how when relatives or friends visited him, the staff asked him afterwards if they were drug dealers:

They see your family and they see like a group of guys come up to visit you [...] and they're like ‘Oh, he's doing very well, and he should be out of this place soon’, and the next minute when the visitors gone they're like ‘Who was that that come up to visit you? And they're ’ Oh, I bet he's a drug pusher, your pimp or whatever', shit like that (participant 23).

However, during the feedback on the report, one participant stated that she did think that drug abuse in hospital was an issue that needed addressing.

Another issue pertinent to this theme, but also to others above, was that some participants stated that they were avoided, which left them with a sense of alienation. There was also the suggestion that these stereotypes are ingrained in the institutions.

What you find is that their reaction to you as a black person is based on their racism and the stereotypes that they have, so for some of them it’s an institutional thing (participant 1).

The participants also commented that refugees and those who couldn't speak English suffered from racist abuse.
I've seen the violence towards refugees or people who don't have English as a first language (participant 1).

There was also disbelief that this kind of treatment of black people could be taking place in England:

The guy wasn't being violent [...] he was screaming [...] when you saw them all rush to him, pick him up, throw him, and the abuse he got in that room was quite terrifying to be honest [...] the nurses picked a foot up to kick him but none of us could see if she actually kicked him and this is a black man. [...] I don't know what his experience was but then to come in there and you think this is happening in England. I know it sounds ridiculous, but on the ward you're thinking, hold on a minute, where am I, but it's happening in England (participant 2).

As discussed under another theme, participants were concerned that there is a misconception that all black cultures are the same, particularly the confusion between African and African-Caribbean cultures. They were also concerned about institutional racism and the number of black people who die in hospital and in police custody.

### 3.2.3 Anger

The result of the participants' experience of psychiatric in-patient departments in the UK was often anger. Participants became angry when staff wouldn't listen to them, when staff mistreated them or fellow service users, and at the lack of information that they received:

He (nurse) said 'keep out of it' and he pushed me and I went flying like that and I thought no, I'm not taking none of this and I got to my feet and I said 'Look you've got to stop, leave her alone' [...] I ended up getting my boots and clomping him on the head [...] he [...] got suspended for three months (participant 7).

Several participants felt permanently scarred by their experience of treatment in an in-patient environment. Several participants stressed that being in hospital made them more unwell:

What I'm trying to say now is the black community, as soon as we go into hospital we get injections and tablets, I want other ways to be looked at [...] alternative therapy, because speaking from experience myself, I haven't been in hospital for 10 years and that's because I ended up having counselling. I talked my problems through, whereas I could have kept on going in and out, in and out (participant 1).

The way I was restrained it linger on me [...] it leaves a lasting effect on you (participant 8).

### 3.3 Other issues

A number of other issues arose in the focus groups that did not fit easily within the high or low order themes identified. These included training and staff support, police involvement, the difference between prison and hospital care, the in-patient environment, issues surrounding admission and A&E and dual diagnosis.

#### 3.3.1 Training/staff support
A consistent theme identified by the participants was the need for staff training and support. Participants questioned how staff, who were themselves dis-empowered by the system, would be able to empower service users. They noted that dealing with people who are mentally unwell can be frightening for staff, as well as emotionally taxing. They also noted that health care professionals lack training and suggested that this ought to be provided.

What you have is you have nurses, well helpers, who come in to assist the nurses and it's nurses that hand out drugs and the assistants, they're not trained in anything, so that needs to be looked at (participant 8).

One participant also commented on the need to train agency staff:

I think the training should be given to the nurses to handle violent patients and a lot of them haven't got no training, they don't know how to handle it because they're from agencies and what I've noticed is agency workers are mainly people who are not trained (participant 8).

There was a suggestion that staff should be forced to have some form of formal counselling to allow them to off-load their own problems and emotions, and so be in a position to help service users:

Make the consultant and the nurse have a day when they come to work but before they start work they come in like an hour or two early and then get some professional counsellors to apply some form of therapy (participant 16).

An advocate in group A echoed these needs and said that she had given up working as a mental health nurse due to the lack of support.

You're expected to empower these clients when you're being dis-empowered yourself (participant 22).

Concerns were raised by the facilitator of one of the groups that any training should be monitored to demonstrate its value, as she perceived that a great deal of training in cultural awareness took place to very little effect:

We've been training staff in cultural awareness now for the last 20-odd years and millions of pounds have been invested in this training, but no one actually goes and evaluates whether the staff have learnt any skills and changed the way they practice or interact on the ward (facilitator A).

### 3.3.2. Police involvement

Issues surrounding police involvement and liaison between hospital staff and police officers were discussed. As noted above, it appeared that police offers often took control in the in-patient environment, even in seclusion practices and in instigating rapid tranquillisation. Police were also involved in admitting many of the participants (see 3.2.4). Participants stressed that the methods of restraint employed in hospital did not differ from those used by the police (see 3.1).
3.3.3. The difference between prison and hospital care

A number of participants had been in both prison and hospital settings. One participant in particular described the differences between the two environments in relation to restrain and seclusion. The participant stressed that restraint was rougher in prison and that you were more likely to get hurt:

In prison was restraining in a different way, the same way there they twist your hands up and push your hands back and if you ain't crying out in pain they just push you even further (participant 23).

As noted above, other participants argued that the same techniques were used in prison and hospital.

In prison, in one participant’s experience, the seclusion room was a cell with a mattress if you're lucky, while in hospital he had a bed to sleep on:

If you're lucky at night they might throw in a mattress, but most of the time you're just there and nobody even know that you're in. I was somewhere like that for about three days in jail, so when I went into seclusion in hospital I just said it's better than in jail because the bed's there and you've got time to wind down, but still it ain't a nice place to be, isolated from everyone else (participant 23).

3.3.4. The in-patient environment

Several participants expressed concerns about the in-patient environment and stressed that it needed to be more homely:

It needs to be more like a comfortable environment [...] like flowers, pictures, you know, carpet on the wards (participant 9).

They also suggested that better ventilation was needed and that the places needed to be cleaner and smell better.

There’s not enough air a lot of the time, because you can't open the window, because people would jump through them, and then you don't get much hot water and it smells very badly sometimes. [...] they took the carpet up but it still stank (participant 1).

Participants also stressed the need for more activities and related boredom to outbreaks of disturbed behaviour.

The nurses and doctors, they leave you on your own after a couple of days and then you don't see them morning or night until it's tablet time [...] because [...] they're not doing their job properly, patients get into fights (participant 19).

They also commented on the need for alarms that pinpointed an incident was taking place.

Sometimes the alarm goes off and they are running around because they don't know where the incident is taking place [...] they’re so het up [...] It's terrible actually. [...]
you've got staff running around shouting ‘Where is it? Where is it?’ and everyone else is getting up and distressed, but by the time they reach the person to jump on them - and that’s what they do, they jump on them - the staff have wound themselves up to a frenzy (participant 2).

3.3.5. Issues surrounding admission and A&E

Many participants stated that their route of admission had been via A&E. They recalled that they had only been offered rapid tranquillisation and that refusal had often resulted in police involvement. Many participants stated that they were taken from A&E to a police cell before being admitted to a psychiatric in-patient department:

All I know is that they offered me an injection and I wouldn’t take it, so I was taken to the police station instead. [...] All I wanted to know was what they were going to inject me with in the first place and they wouldn’t tell me (participant 17).

There were concerns that staff in A&E were not caring and took an extremely authoritarian approach to the management of disturbed/violent behaviour:

Some people are just very heavy-handed, animalistic, they are just power hungry (participant 6).

There were also concerns that black people are immediately given medication, and one participant recounted the tragic consequences of this for a relative:

The whole black community, when you go to A&E, as soon as you go to A&E they put you on injections, they put you on tablets, yeah. Now I have a recent family member who was in hospital, and he just had an ordinary problem, well he’s obviously black, when he was admitted to hospital he was automatically given medication, this confused him, affected him and if, the case is being looked into at the moment, it confused him and so what happened to him is he committed suicide. [...] He was only 18, it didn’t have to happen had he had counselling and attention, the attention that he needed (participant 8).

3.3.6 Dual diagnosis/drug abuse

A number of participants raised concerns about the treatment of those who have a dual diagnosis or whose psychosis is solely drug induced. Concern was expressed by one of the facilitators that one participant had not been offered therapy for their drug problem.

Black people are less likely to be given the option of going to a drying-out clinic to address your intake - whether it’s marijuana, crack cocaine, or whatever - because your symptom is of a psychotic nature, then you’re given the treatment of psychiatric care (facilitator A).

There were also issues relating to participants being sectioned for drug problems. As drug-induced psychosis falls outside the scope of the guideline, these issues were not pursued in the focus group.
Suggestions for improvement

At the end of each focus group, the participants were asked if they had any suggestions for adding to or improving current service provision. While their suggestions could have been coded into one of three themes, they are listed below.

The suggestions made by the participants included:

- staff who listen
- a cleaner environment
- changes to the system
- training and support for staff
- staff who have knowledge of drugs and how the interventions feel
- the need to recognise that everyone gets angry sometimes.

All the issues and themes raised in these focus groups have been fed into the conclusions and inform the recommendations and good practice points outlined in Chapter 5.
Chapter 4: Health care professional focus group findings

Background

The findings below are derived from data collected from nine participants. See section 2.9.2.

The findings are categorised into high order and low order themes and are presented below in Table 5.

Table 5: Themes arising from data analysis

<table>
<thead>
<tr>
<th>High order themes</th>
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Direct quotations of relevance are included below that support the themes above.

4.1. Black experience

Black experience was identified as a high order theme. Four low order themes within black experience were identified: stereotyping, disrespect/control, choice/flexibility, and fear.

Participants were very concerned with how black adult service users experienced psychiatric in-patient settings. Whilst they acknowledged that some had good experiences, they expressed the belief that most have negative experiences.

While there is a certain percentage of black patients who will probably say they’ve got good experiences and positive experiences of the mental health [services ...] what we find is that too large a population or percentage equally say we’ve had a bad experience (participant 31).

They saw this as the product of a number of key elements, namely: stereotyping; disrespect and over-controlling attitudes by staff; and lack of choice or flexibility; all of which, in turn, produced fear on the wards, both for service users and for staff.

4.1.1 Stereotyping

The term 'black' was almost exclusively used to refer to the experience of African-Caribbean service users.
Participants stressed that black service users were often stereotyped as dangerous.

The stereotype is that you’re black […] particularly a black, young man […] you are dangerous (participant 27).

They argued that such stereotyping is self-fulfilling, since staff were often primed for violence when they see a black service user, with the outcome that staff respond defensively or in a hostile manner which, in turn, often resulted in black service users becoming angry.

It’s a self-fulfilling prophecy isn’t it, where you expect certain behaviour and sometimes you know if you like, enabling that behaviour to rear itself (participant 31).

They also stressed than many black service users expect the wards to be violent.

The experience of many black people is that you go onto the ward where there is an expectation that there is going to be violence on that ward (participant 32).

They felt that some of the misconceptions arose from cultural misunderstanding of a loud and boisterous culture.

The perception that goes along with being black is that they're violent and they are aggressive and the misconception that necessarily, because we might gesticulate quite a lot or we might talk loudly, we might laugh loudly, yeah, the perception that’s linked with that is of a violent and aggressive nature (participant 29).

Participants argued that race/cultural awareness training was not the answer.

Race awareness and all that kind of like's a waste of money, and somebody's making a good living out of it (participant 32).

Instead, they stressed that what was needed was a more individual approach, which treated people as individuals, rather than making over-generalisations, which were disrespectful, offered no choice or flexibility and were therefore inherently racist.

Racism, institutional racism, aggressive racism is about making over-generalisations […] Let’s do the individual thing and […] take a bit of rigidity out of the system (participant 25).

It’s about the individual understanding where the individual’s coming from (participant 25).

In relation to this, participants stressed the difference between black African and African-Caribbean communities. On this basis, they challenged the concept of all black teams for Black service users, which they saw as possibly leading to low status black workers caring for black service users

I don’t agree with the black set up teams, with blacks only for blacks, I actually believe that those teams are flawed (participant 27).
Participants saw all these as elements underlying these racist attitudes in operation within UK psychiatric in-patient departments.

What we’re talking about basically is the dynamics of racist attitudes and beliefs and the interplay that takes place anywhere (participant 31).

4.1.2 Disrespect/control

Participants defined disrespect as being put down and being made to lose face. This was closely connected to staff control over the wards.

Participants saw disrespect as a major contributor to in-patient violence, over and above other concerns, such as environmental factors.

If that person is going to be disrespected or that patient is being disrespected regardless of the food, the decor or whatever it is, they will still lash out because they feel disrespected, they feel oppressed (participant 26).

One participant stressed that being treated with disrespect is taken very seriously within the black community, especially within black youth culture.

One of the worst things that you can do in that environment is to insult somebody; it is to disrespect somebody (participant 27).

Participants stressed that disrespecting black service users reinforces treatment that they receive everyday. They argued that, when this is received from those who are meant to be caring for you, it is especially insulting, and unsurprising if it leads to violence on the part of the service user.

When you’re experiencing disrespect every day of your life and you’re in an environment with nurses who are supposed to care for you and they’re still disrespecting you in your face, it’s not surprising you then become violent (participant 31).

Participants argued that this behaviour was linked to racism and to a self-fulfilling prophecy that those you predict to be violent will be violent because of the way that you will treat them subsequent to the prediction.

They will be violent if you predict they will be violent (participant 31).

Participants argued that one of the worse things that you can do to someone is to make them lose face.

What Nelson Mandela has said is the worse thing you can do to somebody is to make them lose face. […] People never forget that […] people never forget instances if they’re made to lose face (participant 26).
Participants argued that what was needed was for staff to establish relationships with service users, showing them respect and then putting in place proper care plans.

[It's] about getting a relationship, showing them some sort of common decency, getting proper care plans (participant 32).

Participants saw staff members’ disrespect of black service users as a factor within staff power and control. They stressed that staff need to negotiate rather than impose.

You need to be more negotiating, respectful (participant 26).

They also argued that staff power needed to be reduced.

Reduce some of that power (participant 31).

At the same time, participants argued that there was a racist imbalance of control, even on wards where the majority of staff were black. They argued that although many of the lower level staff were black, those with the real power tended to be white.

Although you have a large majority of black staff, at the helm, somebody who is actually in charge, you know tends to be (participant 30)...

They’re white (participant 31).

Absolutely (participant 30).

4.1.3 Choice/flexibility

Integrated with the theme of disrespect/control was that of choice. Participants argued that nursing staff were not always prepared to relinquish power and give a service user choice as they get better.

You’re not thinking about this person as human who has just been through a terrible experience, who is probably very flat due to having lots of medication, probably far too much, and is now coming back and wanting to behave normally, wanting to have choices (participant 31).

Participants argue that lack of choice leads to violence, and that there is a need for a change in culture, so that health care professionals do not have all the power, and make all the choices.

[It's] about allowing people to make choices and having autonomy about things if they’re not in secure settings or whatever, and allowing people to have autonomy [...] as much as we can [...]. There is a tendency to be prescriptive about everything (participant 29).

Participants also stressed the need for flexibility within the system. One particular issue was staying up at night.

We know that many young blacks stay up most of the night and sleep in during the day, but in hospital they want to stay up during the night but you’re not allowed to
because the ward staff say you have to go to bed and they say you have to get up at this sort of time (participant 28).

While participants recognised that service users must be given choice, at the same time, they acknowledged that staff must be protected. They suggest that the key to this was being able to take stock of the risk and know when to set limits and impose restrictions.

The risk has to come from predictors that aren't just about physical appearance (participant 28).

The new buzzword is responsible risk-taking; you should take risks but make sure you are doing it responsibly (participant 26).

If you can't deal with it on your own, then make sure you get other people in, but really not waiting until that end-point, where it is imminent (participant 28).

4.1.4 Fear

One participant stressed that fear of young black men is a real problem to which there are no easy solutions.

One of the things that I'm grappling with is this issue of fear and where that comes from and how people acknowledge that they feel this fear when they come into contact or have some interaction with black, young men in particular (participant 31).

Other participants agreed that this is a real problem within the interaction between black service users and white staff.

We're talking about fear that exists in that interaction between black and white people, and how do staff then understand the genesis of that fear; how that fear is then perpetuated; and how that fear is used in the interaction between themselves and patients (participant 31).

As well as white people being afraid of black people, participants argued that many Africans are afraid of African-Caribbean people.

Some Nigerians are scared of Jamaicans, you know (participant 31).

Participants noted that there were further problems with wards being staffed by Africans but populated by African-Caribbean people. They also noted that there are differences between black people born overseas and those born in this country.

I've worked in environments before where there was actually a lot of conflict between blacks (participant 26).

Yes, I have (participant 27).

Between blacks from Africa and blacks from the Caribbean and blacks who are born in this country and it's to do with different aspirations (participant 26).
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Participants argue that these differences need to be acknowledged and that the solution does not lie in simply populating wards containing predominantly black service users with black staff. Rather, each service user needed to be treated like an individual.

This parachuting of blacks, it's part of all this wrongness, and we need to be de-emphasising these things and saying, in terms of looking after me, it doesn't matter what colour they are, it doesn't matter what colour you are, it's about the individual understanding where the individual is coming from (participant 25).

At the same time they stressed that colour was an issue that needed to be treated seriously.

If you don't see my colour, then you don't see me (participant 30).

A further element of fear was that experienced by the service user and the need for staff to communicate in a way that takes such fear into consideration.

What is important is the patient who is scared and you communicated with the patient and you try and strike a balance (participant 24).

Apart from racist fear, participants also argued that staff have a general fear of service users.

One interesting dynamic is that staff fear the patients more than the patients fear each other (participant 26).

Another type of fear that participants identified was staff fear, often of being too authoritarian, which led to situations getting out of control and more authoritarian interventions being implemented.

I'm sometimes concerned that we put [...] so much, kind of, awareness training, that, in fact, people who supposedly can predict violence are so right on, they don't want to take any kind of remedial action [...] in danger of them being seen as [...] being draconian (participant 32).

Participants suggested that this fear also extended into a need to control service users, so that when service users start to get better, staff think that they are relapsing.

I know a lot of cases [...] where for instance you will have a situation where a black patient is becoming much better and he's beginning to smile, he's beginning to express himself and probably talk a bit more [...] a lot of professionals will see this as the person becoming unwell again (participant 30).

Participants also stressed the need for a culture of openness amongst staff, so that if a staff member finds a service user particularly frightening, they can pass them over to another staff member, rather than opting for, perhaps unnecessary, authoritarian measures.

If you were to say to your colleagues that I'm really, really frightened of this person, you know, I'm not necessarily the best person to be engaged with that person just now, you know, that could diffuse situations quite a bit (participant 28).
An outcome of fear, which participants noted in relation to black service users, was the use of force and authoritarian interventions.

I think generally nurses are far too eager to jump on black patients in numbers and use excessive force on them and it goes back to a lot of what we’re already said about fear and so on (participant 31).

4.2 Frustration

Frustration was also identified as a high order theme. Four low order themes within frustration were identified, together with a number of concerns that fell outside the scope of this research. The four low order themes were: system problems, untrained staff, monitoring, in-patient environment.

Participants expressed a great deal of frustration with current adult psychiatric in-patient services in the UK. They felt that the system often works against black service users; that the existence of many untrained staff exacerbates problems and lead to dangerous practice; that monitoring of practice is desperately needed; and that the in-patient environment needs to be made friendly for black service users.

4.2.1 System problems

The participants suggested that many of the problems encountered by service users in relation to the short-term management of violence were inherent within the system.

It was argued that you were far more likely to be restrained if you are black.

We know from whatever little data is available that black patients are more likely to be restrained, secluded, medicated and so on, so that the whole process of heavy-handed management is an issue for black patients (participant 31).

Participants noted that sometimes staff react to violence when the situation has passed. Often, if a service user throws some furniture when no one is around, endangering no one.

It’s five minutes later (participant 26).

[Staff] wait for the team to come along and then they all go in when this person they want is sitting there (participant 28).

Participants argued that once an authoritarian approach has been taken, the cycle of restraint, medication and seclusion automatically follows.

Then you have the cycle, you know restraint, medication, and quite often seclusion, even now it follows that. [...] You’ve got the person down on the floor restrained. What are you going to do with them next? Oh yes, well let’s give them some medication, but they can’t stay there all the time. Oh yes, put them in seclusion (participant 28).
Participants argued that the cycle is unnecessary. One intervention would often do. What is more, they suggest that service users are given an unnecessary amount of drugs, both an antipsychotic and benzodiazepine, when one would do, or it would be possible to wait before giving the second drug.

Everybody goes for restraint, medication, seclusion; any of those interventions could work on themselves, on their own (participant 26).

People not only give an antipsychotic, they give a benzodiazepine rather than the benzodiazepine and wait and then give the other thing (participant 26).

The participants note that there is a pressure to act in this more authoritarian way.

If you didn’t give the two things, I mean people think you are weak or something (participant 26).

Soft, sounds soft, right? (participant 29).

Participants argued, however, that if interventions, such as seclusion, were not a possibility, alternatives would be found.

If you say you’re not going to have seclusion, people will look for alternative ways of managing violence (participant 28).

This was reinforced by references to units that did not have seclusion rooms and, in particular, in reference to a unit in which the seclusion room had to be closed for a time.

The seclusion room was closed for something like 12 weeks….during that time they found the alternatives….by the time it reopened, seclusion was hardly used because people have found other things to do (participant 26).

4.2.2 Training/untrained staff

The participants raised concerns that there was no clear guidance as to the number of staff needed for restraint and participants were themselves unclear whether the norm was five-person or three-person restraint teams.

From my understanding of the training, is that it’s generally a three-man team (participant 31).

However, one participant stressed that having five-person teams was not heavy-handed, if it was a safety measure.

I used to think that it is heavy-handed when I’d seen five people launching onto one patient and pinning them to the ground, until I actually understood what the restraint was about, and the way that one of those people is controlling the head, one person is on either arm and […] the numbers were actually there from the safety point-of-view (participant 29).

Participants argued that it was essential that staff should be trained not only in physical skills, but also in theoretical skills and in how to de-escalate a violent situation.
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You should never be training people just in the physical skills required to restrain people (participant 28).

Absolutely (participant 31).

[...] equal weight must be given to the issues, the theoretical aspects of managing someone and the issues of how to de-escalate someone, how to recognise what is happening in front of you and to take action before it reaches the point where you have to restrain and I don't think that enough is being done on that (participant 28).

Participants also stressed that nurses need to be trained in the use of resuscitation equipment and for that equipment to be available and a doctor to also be available.

One of the issues in terms of training I would like to add is, the resuscitation, dealing with emergency situations, because every single death that has occurred, it's always a factor that nurses do not seem to be able to resuscitate appropriately, they don't know how to use the equipment, the equipment is not available, there's no doctor on site (participant 31).

Of particular concern to participants was the use of untrained staff for the short-term management of disturbed behaviour within psychiatric in-patient settings.

The reality, as I understand it, is that untrained staff are being placed [...] in places like Broadmoor with dangerous patients (participant 27).

Around the issues of best practice, participants wanted to see mandatory requirements in law relating to the various interventions used for the short-term management of disturbed behaviour.

The Mental Health Commission needs to write in their code of practice [...] something about when you can use various interventions, for what (participant 26).

4.2.3 Monitoring

Participants stressed the need for monitoring. They argued that a monitoring committee should be set up, with a number of black participants to agree on minimum standards of care and practice.

It doesn't need to be blacks only, but it certainly needs to have probably four or five people who can, three minimum, going to places and actually agreeing somewhere what are the minimum requirements. [...] I think that monitoring things is absolutely critical (participant 27).

In relation to this, it was also argued that there was a need for a central register to record all deaths in psychiatric in-patient departments.

We still don't know five years down the road from [David Bennett's] death, how many more people have died in that situation. So there's no monitoring going on (participant 31).
4.2.4 In-patient environment

Participants stressed the need for the right environment. They argued that there should be some acknowledgement of black culture on psychiatric in-patient wards.

You have a ward with a group of black patients, they want rice and peas and they cannot get rice and peas, so we might see it as very mundane and very basic, but that is actually quite significant to the individual (participant 28).

They stressed, however, that this must be done in a relevant way, not to the exclusion of any cultural and ethnic group.

You know, for example, Martin Luther King, I don’t associate what he stood for with the black population within psychiatric hospitals (participant 30).

What I’m actually getting here is striking a balance, not one extreme or the other (participant 30).

In relation to food, they stressed that it must be cooked by people who knew how to make it!

On the general ward we were having a lot of Asian patients on the ward and a way of making them feel more at home was to have an Asian menu but the Asian menu was cooked by an English [cook]... and we found on the wards that the patients would not, the Asian patients would not order the Asian meal because it was not cooked the way they would cook at home (participant 29).

Participants also stressed that often buildings were badly designed and health care professionals were waiting for resources to change the environment.

Most of the buildings are adapted […] hospitals have not enough money to invest in those facilities (participant 24).

They argued that the architecture often prevented de-escalation, and didn’t allow service users to be removed to a place other than a seclusion room for the purpose of de-escalation.

There’s not enough space (participant 24).

People will not use de-escalation; they would not use some of these non-intrusive interventions until you change the architecture of these places (participant 26).

Above all else, participants stated the need for patient-centred care. As noted earlier, it was discussed in relation to bed times and wake up times.

If you’ve got a patient-centred care approach and if people have got care plans […] the person-centred approach shouldn’t allow that it’s 7 o’clock so everybody get up (participant 32).

As mentioned above, this was also discussed in more general terms.
Let’s do the individual thing and just changing the culture and take a bit of rigidity out of the system and having a much more flexible system [...] a more holistic approach (participant 25).

Participants also felt concerned that the patient mix was not always appropriate. They expressed concern that patients with different diagnoses, particularly those with personality disorder, were mixed together on psychiatric wards.

There is a fundamental error in judgment and psychiatric management and allocation of resources, having all these patients mixed up and I don’t mean all these patients by race, I mean by category (participant 27).

We do have personality disordered individuals alongside those who so called need asylum and that these factors interacting do cause violence (participant 24).

All the issues and themes raised in this focus group have been fed into the conclusions and inform the recommendations and good practice points outlined below in Chapter 5.

4.2.5 Concerns outside the scope of this research

Many of the participants expressed dissatisfaction that the guideline did not cover preventative measures beyond the short-term management of violence. They argued that many of the problems that arise amongst the black community within psychiatric in-patient settings are the products of social factors - such as poverty, dysfunctional families, being in care and poor schooling - which result in conduct disorders, leading people into pathways of violence. They insisted that if violence in psychiatric in-patient departments is to be reduced, then real efforts must be made to tackle these issues.

We need to probably be looking at prevention, or what comes before those things [i.e. the interventions for the short-term management of violence] (participant 30).

There is no emphasis on prevention and cause (participant 27).

We’re saying that we need to be looking at prevention rather than, you know, how to manage, you know, disturbance (participant 30).

We feel this is a drop in the ocean (participant 28).

One participant, in particular, felt that diagnoses were biased against black service users. The participant stressed that the majority of service users who are classified as dangerous are black and that there is an over-representation of black service users within all psychiatric in-patient settings. He also argued that there is a worrying relationship between being sectioned and being black. Other participants signaled their agreement non-verbally.

In general terms, from what we’ve been saying today, we all agree that the over-representation of black patients within psychiatric wards, psychiatric locked wards, medium secure units, the whole range of psychiatric in-patient services is something that we are concerned about (participant 27),

Even to get on a ward with a section of the Mental Health Act is a black phenomenon now within our society (participant 27).
Participants expressed fundamental concerns about the use of diagnoses in the UK today.

It goes back to the diagnosis [...] that's about diagnosis because it's easier to diagnose schizophrenia as opposed to PD and offer proper PD services (participant 32).

Since these issues fall outside the scope of this report and require work that cannot be done within the resources of this study, none of the issues discussed in the section above are addressed in the conclusions and recommendations for this report. In order to tackle these issues properly, further systemic reviewing and research would be required. In no way is this meant to detract from the validity of these statements.

- **Suggestions for improvement**

As many of the issues above focus directly on issues for improvement, participants were not asked for further suggestions for improvement.
Chapter 5: Conclusions and recommendations

5.1. Conclusions

There is no doubt that the current Government is concerned with and committed to reducing violence throughout the NHS. The following recommendations and good practice points have been generated to assist this process. They draw on five different sources: the focus groups described in this report; the input of ‘expert patients’ in the Guideline Development Group (GDG) meetings; the expertise of the GDG; evidence generated by the systematic review; and recommendations found in recent reports and guidelines. All the main themes identified in the focus groups have been used to generate recommendations and good practice points.

In generating these recommendations and good practice points it became apparent that many of the issues raised in the focus groups - such as the need to be listened to or for debriefing - were applicable to all service users. A decision was therefore taken to stress the needs of black and minority ethnic (BME) service users, while also attempting to safeguard the rights of all service users.

It is also important to note that the recommendations and good practice points below form part of a larger whole. The full recommendations and good practice points for this guideline can be found in the full guideline and also in the NICE version. Many of the other recommendations relate to the specific interventions that are used for the short-term management of disturbed/violent behaviour and how these should be carried out in the event that they are needed. The recommendations and good practice points below should be considered in relation to the overall guidance given on the short-term management of disturbed/violent behaviour in psychiatric in-patient settings.

5.2 Consensus process

Due to a dearth of good quality evidence, many of the recommendations in this guideline were arrived at solely by means of formal consensus methods. Three consensus meetings were held in March 2004.

A modified nominal group technique was used to finalise the recommendations and good practice points. An external facilitator was used to chair the meeting. The consensus process was facilitated by computerised voting consoles, which assured anonymity and allowed percentages to be quickly calculated. It also allowed the GDG to view the range of responses in the form of a graph immediately voting had occurred. Consensus was set at 80 per cent, unless a significant group within the GDG all voted against a recommendation – for example, if all the psychiatrists voted against a recommendation. If this occurred, even though 80 per cent agreement was achieved, consensus was considered to have not been reached.

For each recommendation and good practice point, prior to voting, a discussion took place and modifications were made as necessary. The rewording was retyped if necessary, and then displayed on a screen, so that GDG members could see the recommendation or good practice point they were voting upon. If consensus was achieved, the GDG moved on to discuss the next recommendation or good practice point. However, if consensus was not achieved, the
recommendation or good practice point was discussed a second time, modifications made to reflect the concerns of the GDG, and re-voting took place. After debate on some areas, consensus was achieved for all recommendations submitted for first stage consultation.

5.3 Recommendations and good practice points

Working with service users (from diverse backgrounds)

Introduction
There is a growing acceptance that service users in adult psychiatric in-patient settings ought to be involved in their care as far as possible. This extends to the short-term management of disturbed/violent behaviour, where service user input can be made through measures such as advance directives. Listening to service users' views and taking them seriously is now also regarded as an important factor in the short-term management of disturbed/violent behaviour. Service users may also have physical needs that need to be taken into account when using the interventions discussed in this guideline.

The following recommendations and good practice points focus specifically on the needs that arise from diversity (cultural, social, spiritual and gender-related needs) and physical needs in the context of the short-term management of disturbed/violent behaviour. It is important that service users should not be treated less favourably on the basis of their gender, race, diagnosis, religious/spiritual practices, or disability. However, many of these recommendations and good practice points apply to all service users.

Creating a feeling of safety and understanding

Introduction
Preventing disturbed/violent behaviour is a priority. Providing relevant information so that service users feel safe and understand what may happen to them in the event that they are disturbed/violent will help prevent unnecessary aggravation.

1.4.1
All service users, regardless of culture, gender, diagnosis, sexual orientation or religious/spiritual beliefs should be treated with dignity and respect. (D)

1.4.2
Service users must have access to information about the following in a suitable format:

- which staff member has been assigned to them and how and when they can be contacted
- why they have been admitted (and if detained, the reason for detention; the powers used and their extent; and rights of appeal)
- what their rights are with regard to consent to treatments, complaints procedures, and access to independent help and advocacy
- what may happen if they become disturbed/violent.

This information needs to be provided at each admission, repeated as necessary and recorded in the notes. (D)

1.4.3 An effective and fair complaints procedure must be put in place. (D)GPP
1.4.4 Where at all possible, service users should have a choice of key worker. (D)GPP

1.4.5 Service users should be given the opportunity to have their needs and wishes recorded in the form of an advance directive. This should fit within the context of their overall care and should clearly state what intervention(s) they would and would not wish to receive. This document should be subject to periodic review. (D)

1.4.6 During the staff/service user risk assessment interview, where a risk of disturbed/violent behaviour is discussed or identified as a possibility, intervention and management strategies (and the service user’s preferences regarding these) should be recorded in the service user’s care plan and health care record. The service user should be given a copy of the care plan and, subject to their agreement, a copy should be given to their carer.

1.4.7 The physical needs of the service user should be assessed on admission, or as soon as possible thereafter, and then regularly reassessed. The care plan should reflect the service user’s physical needs. (D)GPP

1.4.8 Following any intervention for the short-term management of disturbed/violent behaviour, every effort should be made to establish whether the service user understands why this has happened. Where possible, this should be carried out by a staff member not directly involved in the intervention. These efforts should be documented in the service user’s notes. (D)

1.4.9 Staff should take time to listen to service users, including those from diverse backgrounds, (taking into account that this may take longer when using interpreters), so that therapeutic relationships can be established. (D)GPP

1.4.10 All services must have a policy for preventing and dealing with all forms of harassment and abuse. Notification of this policy should be disseminated to all staff and displayed prominently in all clinical and public areas. (D)

1.4.11 In the event of any form of alleged abuse, the matter should be dealt with by staff as soon as is practicable in accordance with relevant policies of the service. (D)GPP

1.4.12 During the administration or supply of medicines to service users, confidentiality should be ensured. (D)GPP

1.4.13 Prescribers should be available and responsive to requests for medication review. (D)GPP

1.4.14 Staff should be encouraged to talk to service users from diverse backgrounds, including those with special needs, about their experiences and to offer them support and understanding, especially if their experiences have been negative. (D)

Pregnant women
1.4.14 Special provision should be made for pregnant women in the event that interventions of the short-term management of disturbed/violent behaviour are needed. These should be recorded in the service user’s care plan. (D)GPP

Black and minority ethnic service users

Introduction
There is growing concern that black and minority ethnic service users, particularly those from African-Caribbean communities, are sometimes adversely affected by negative stereotyping in which they are perceived as more dangerous than other service users. This may cause staff to use interventions such as rapid tranquillisation, restraint or seclusion before less coercive measures have been tried.

1.4.16 Services must identify a board member to take specific responsibility for all matters relating to equality and diversity. Responsibilities must include the nature and adequacy of service provision in relation to the short-term management of disturbed/violent behaviour; training on all matters relating to equality and diversity; monitoring service usage by ethnicity; and consultation with local black and minority ethnic groups. (D)

Service users with disabilities

1.4.17 Each service should have a policy that outlines the procedures for dealing with service users who have disabilities, including those with physical or sensory impairment and/or other communication difficulties. (D)GPP

1.4.18 Individual care plans should detail staff responsibilities for de-escalation, rapid tranquillisation, physical intervention and seclusion of service users who have disabilities, including those with physical or sensory impairment and/or other communication difficulties. (D)GPP

Service users with HIV or other infectious diseases

Policy

1.4.19 Services should have policies in place, developed in conjunction with the trust infection control officer or relevant officer in the service, that outline the reasonable steps that can be taken to safeguard staff and other service users if a service user who has HIV, hepatitis or other infectious or contagious diseases is acting in a manner that may endanger others. (D)GPP

1.4.20 If staff are aware that a service user has HIV, hepatitis or other infectious or contagious diseases, the advice of the trust infection control officer or relevant officer in the service should be sought. (D)GPP

Confidentiality issues

1.4.21 Patients are owed important obligations of confidentiality but these are not absolute. In certain circumstances they may be breached to safeguard others. This is particularly relevant where a service user has HIV, hepatitis or other infectious or contagious
diseases, and is acting in a manner that puts others at risk. Legal and ethical advice should be sought in these circumstances. (D)GPP

1.4.22 If any person has sustained any injury during the management of disturbed/violent behaviour where blood has been spilt or the skin has been broken, or there has been direct contact with bodily fluids, the local infection control policy should be followed. (D)GPP
5.4 Suggestions for future research

The following research recommendations are part of a number of recommendations found in the full guideline and NICE version of the guideline. They should be viewed in relation to the other research recommendations found in these documents, which also relate to issues concerned with the short-term management of disturbed/violent behaviour in psychiatric inpatient settings.

- Qualitative and survey research is needed to examine service users’ (including black and minority ethnic groups) views on the precursors of aggression, aggravating factors. This should also include service users' views on observation, de-escalation techniques and techniques used to manage short-term violence such as rapid tranquillisation, restraint and seclusion.

- Clinical trials and innovative longitudinal naturalist research should be conducted in settings that reflect current clinical practice in the UK, among large representative samples of adult psychiatric in-patients (including black and minority ethnic groups) that investigate the utility, acceptability and safety of available medicines and their dosages for rapid tranquillisation and PRN regimes (including atypical and anti-psychotics), employing larger samples.

- National audit data collections are required on the incidence of sudden death among psychiatric service users (including ethnicity, age, and gender) receiving rapid tranquillisation and on death/morbidity associated with restraint and seclusion.
References


Violence: The Short-Term Management of Disturbed/Violent Behaviour in Psychiatric In-patients and Emergency Departments Guideline


Kitzinger J (1994) The methodology of focus groups: the importance of interaction between participants. *Sociology of Health and Illness*; 16 103-121.


Violence: The Short-Term Management of Disturbed/Violent Behaviour in Psychiatric Inpatients and Emergency Departments Guideline

Guidelines and reports consulted and studies appraised

Guidelines and reports consulted


Social division and difference: black and ethnic minorities. NHS National Programme on Forensic Mental Health Research and Development. Ndegwa D.

The recognition, prevention and therapeutic management of violence in mental health care (2002). UKCC.


Studies appraised

Included


**Excluded**


### Appendix 1: Ethnicity review evidence tables - included studies

<table>
<thead>
<tr>
<th>Source</th>
<th>Study design</th>
<th>Aims of study</th>
<th>Outcome measures</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chen et al. (1991)</td>
<td>Case control.</td>
<td>To investigate whether there are any differences between Afro-Caribbean and non-Caribbean service users with regard to:</td>
<td>Information obtained from medical records.</td>
<td>More Afro-Caribbeans than non-Caribbeans were treated with dosages above 2000mg of chlorpromazine equivalent ($\chi^2=4.98, p&lt;0.03$) (not adjusted for confounding e.g. diagnosis).</td>
</tr>
<tr>
<td>Country: UK</td>
<td>Setting: Nottingham. Population: consecutive series of N=40 Afro-Caribbean and N=40 non-Caribbean service users matched for age sex and diagnosis – schizophrenia.</td>
<td>• prescribed dosages of neuroleptic medication during the acute phase of the illness</td>
<td>• Differences in receiving neuroleptic medication.</td>
<td>33% (N=24) disturbed Afro-Caribbean service users received a maximum dosage of above 2000mg whereas none of the 12 disturbed non-Caribbean service users received this dosage [p&lt;0.03, Fishers’s exact probability test].</td>
</tr>
<tr>
<td>Evidence level: 2-</td>
<td></td>
<td>* the proportion commenced on depot maintenance therapy after a first episode of psychosis</td>
<td>• Relationship of medication to behavioural disturbance.</td>
<td>24 Afro-Caribbeans and 12 non-Caribbeans had one or more disturbed episodes ($\chi^2=6.1, p&lt;0.01$).</td>
</tr>
<tr>
<td></td>
<td></td>
<td>* the proportion admitted to hospital, the duration of admission and the use of compulsory procedures</td>
<td>• Episodes of disturbance (violence and bizarre behaviour).</td>
<td>15 Afro-Caribbeans and five non-Caribbeans had two or more episodes ($\chi^2=5.4, p&lt;0.02$). Time period for episodes not stated.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>* the degree of behavioural disturbance in the acute stage of illness.</td>
<td>• Compulsory detention.</td>
<td>20 Afro-Caribbean service users were detained under the Mental Health Act during admission compared with nine non-Caribbeans ($\chi^2=5.4, p&lt;0.02$).</td>
</tr>
</tbody>
</table>

**Reviewer’s comments**

- This appeared to be a matched case control study, although it was not described as such.
- Data was obtained from chart records.
- Prescribing practice is not directly affected by simple ethnic stereotypes. However, some findings provide limited evidence to support concern about over prescribing for some Afro-Caribbean service users.
### Choca et al. 1990

**Country:** US  
**Evidence level:** 2-

**Retrospective chart review.**  
**Setting:** psychiatric ward, veterans' administration centre.  
**Population:** black N=235 and white N=471 male service users admitted over seven years.

**Aims of study:** To examine how successful the Millon clinical multiaxial inventory (MCMI) test was in producing a culturally fair test.

**Outcome measures:** Clinical fairness of diagnostic tool MCMI to predict psychopathology. (This personality instrument has weighted scores to provide different norms for black, white and Hispanic individuals to address potential racial bias).

**Results:**
- Operating characteristics of white and black subjects for the different diagnostic categories (see table below).
- Results of matched pairs, 45 items on the MCMI showed significant difference as opposed to an expected nine items, if the difference between the two groups was due to chance.
- Multivariate analysis of the 20 scales including antisocial (<.01) and passive-aggressive/explosive (ns) showed blacks scoring significantly differently from whites on nine scales (<.05).
- To evaluate the structure of the test factor analysis was conducted - three factor structure measuring a) maladjustment b) extroverted acting out c) psychosis.
- The factor congruence was .98, .98, .97 respectively indicating high similarity. The factor analysis indicates that the test is measuring similar factors in both groups. Therefore support is maintained for continued use of the test for blacks, with some adjustment at item and scale level. Confounding and potential limitations are discussed thoroughly.

#### Operating characteristics of white and black subjects for the different diagnostic categories:

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Personality disorder</th>
<th>Anxiety disorder</th>
<th>Affective disorders</th>
<th>Substance abuse</th>
<th>Psychotic disorder</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Prevalence</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Whites</td>
<td>56%</td>
<td>7%</td>
<td>35%</td>
<td>47%</td>
<td>32%</td>
</tr>
<tr>
<td>Blacks</td>
<td>52%</td>
<td>3%</td>
<td>20%</td>
<td>55%</td>
<td>56%</td>
</tr>
<tr>
<td><strong>Overall predictive power</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Whites</td>
<td>.55</td>
<td>.21</td>
<td>.43</td>
<td>.67</td>
<td>.54</td>
</tr>
<tr>
<td>Blacks</td>
<td>.52</td>
<td>.15</td>
<td>.36</td>
<td>.65</td>
<td>.57</td>
</tr>
<tr>
<td>Chi-square</td>
<td>.99</td>
<td>10.83</td>
<td>18.93</td>
<td>17.52</td>
<td>57.45</td>
</tr>
<tr>
<td>Significance</td>
<td>Ns</td>
<td>.01</td>
<td>&lt;.01</td>
<td>&lt;.01</td>
<td>&lt;.01</td>
</tr>
</tbody>
</table>

**Note:** Prevalence refers to the percentage of members of that race who were diagnosed as having the disorder. Sensitivity refers to the probability that the MCMI scale is elevated, given the presence of the disorder. Specificity refers to the probability that the MCMI scale is not elevated, given the absence of the disorder. Positive predictive power shows true positives; it indicates the probability that the presence of an MCMI scale elevation accurately predicts the presence of a disorder. Negative predictive power shows true negatives; it indicates the probability that the absence of an MCMI scale elevation accurately predicts the absence of a disorder. Overall diagnostic power shows proportion of cases correctly classified.
<table>
<thead>
<tr>
<th>Source</th>
<th>Study design</th>
<th>Aims of study</th>
<th>Outcome measures</th>
<th>Results</th>
</tr>
</thead>
</table>
| Chu et al. (1986) | Prospective single sample, recruited over 3.5 years. | To compare the differences in psychopathology between black and white schizophrenics. | Psychopathology measured by BPRS scale (brief psychiatric rating scale) and the Itil-Keskiner psychopathology rating scale. Differences measured between items on scales via Melvin Thorner structured interviews with four white and one black researchers. | - Black and white differences adjusted for sex due to potential confounding as ratio of male and female varied between black and white.  
- Black male schizophrenics exhibited asocial behaviour more frequently than white male schizophrenics [black 58% white 36% p< .02]. All other results for black males vs. white males were non-significant, including items for angry and outbursts. Results for females were more likely to be different black vs. white. |
| Country: US     | Setting: seven state hospitals and mental health centres. |                                                                              |                                                                                 |                                                                         |
| Evidence level: 2- | Population: 275 consecutive schizophrenic admissions. |                                                                              |                                                                                 |                                                                         |

Reviewer’s comments
Authors note sex ratio in black service users different from white and adjusted for in analysis.
Study does not address the issue of possible observer bias in the test by researchers, as blinding of outcome assessors is not stated.
### Source
Coid et al. (2000)

### Study design
Survey

Setting and population: N=3155. All ethnic first admissions from 1988 - 1994 to all maximum and medium secure forensic services in seven of 14 regional health authorities. Included urban and rural areas; excluded those no fixed abode or if address inaccurate.

### Aims of study
To estimate population-based prevalence rates of treated mental disorders in different ethnic groups compulsorily admitted to secure forensic psychiatry services.

### Outcome measures
- Case information taken from notes obtained on visits to the hospitals.
- Black and Asian ethnic groups were compared to white service users using logistic regression to adjust for independent variables, age; gender; marital status; social deprivation; primary diagnosis of personality disorder; and then stratified by ethnicity according to criminal behaviour and behavioural disorder leading to admission; previous criminal history; previous institutional history; the source of referral for admission; and lifetime diagnoses.
- A sub group of 569 (21%) admitted for violent or difficult behaviour was compared by ethnic group on specific violent behaviour – for example, fire-setting, sexual aggression. No differences found. Results not reported.

### Results
- Losses=18 no data, 164 (5%) no fixed abode, three ethnicity not coded.
- Jarman under privileged area scores were used using postal code to score individual cases into UPA deciles. The prevalence rate denominator for the population was adjusted for under enumeration of young males in the census from which the population statistic was obtained, as they are of most interest to this study.
- Demographic ethnic: black=21%, white=74%, Asian=3%, other=2%.
- There were 5.6 times as many black males admitted than white males, and nearly three times as many black females as white females. 12 times as many black males and nine times more black females were admitted than Asians.
- See table below for most relevant results.

### Reviewer’s comments
Authors note that these analyses under-estimate the prevalence of treated mentally disordered offenders and represents the most serious cases only. Areas vary in the ability to provide locked wards i.e. low security. Selected population though ethnic differences have been previously reported in this population.

### Comparison of black ethnic group with white ethnic group

<table>
<thead>
<tr>
<th>Variable</th>
<th>White</th>
<th>Black</th>
<th>OR confidence interval and P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>17%</td>
<td>9%</td>
<td>0.48 [0.36, 0.65] &lt;0.001</td>
</tr>
<tr>
<td>UPA deciles 9-10</td>
<td>54%</td>
<td>88%</td>
<td>6.31 [4.88, 8.15] &lt;0.001</td>
</tr>
<tr>
<td>Non crime admission</td>
<td>21%</td>
<td>16%</td>
<td>0.73 [0.58, 0.92] 0.008</td>
</tr>
<tr>
<td>Personality disorder</td>
<td>20%</td>
<td>9%</td>
<td>0.22 [0.15, 0.31]</td>
</tr>
<tr>
<td><strong>Index offence – Murder, grievous bodily harm</strong></td>
<td></td>
<td></td>
<td>1.12 [0.89, 1.43] (Adjusted) ns</td>
</tr>
<tr>
<td>Actual bodily harm, threats</td>
<td>1.38 [1.10, 1.73] (Adjusted) 0.005</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Previous convictions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Violence</td>
<td>1.73 [1.44, 2.08] (Adjusted) &lt;0.001</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Effects of lifetime diagnosis</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Schizophrenia</td>
<td>1.83 [1.48, 2.26] (Adjusted) &lt;0.001</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unspecified diagnosis</td>
<td>2.41 [1.34, 4.34] (Adjusted) 0.003</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Borderline personality disorder</td>
<td>0.23 [0.13, 0.43] (Adjusted) &lt;0.001</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Source</td>
<td>Study design</td>
<td>Aims of study</td>
<td>Outcome measures</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>------------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Commander et al. (1997a)</td>
<td>Two single sample prospective cohort nine months - 13 months recruitment.</td>
<td>To provide an understanding of the pathway into in-patient psychiatric care; the treatment received</td>
<td>• Demographic information including history of violence,</td>
</tr>
<tr>
<td>Country: UK</td>
<td>Setting: four in-patient facilities in North Birmingham.</td>
<td>during the time spent in hospital; and needs for care three months after discharge; by people from</td>
<td>criminal activity and imprisonment.</td>
</tr>
<tr>
<td>Evidence level: 2+</td>
<td>Population: consecutive psychiatric admissions and discharged in-patients</td>
<td>black and ethnic minorities, and their level of satisfaction.</td>
<td>Pathways to care - to identify contacts, including police involvement.</td>
</tr>
<tr>
<td></td>
<td>drawn from Asian, white and black (N=40 per group) communities.</td>
<td></td>
<td>Insight.</td>
</tr>
<tr>
<td></td>
<td>Severe mental disorder aged between 16-60; no previous hospital in last month; present admission seven days.</td>
<td></td>
<td>Information on admission procedures.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Satisfaction.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Social behaviour - social behaviour scale (SBS) &amp; mental state Krawiecka and Goldberg scale (K&amp;G).</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>From interview and medical records (interviews conducted by four female interviewers, one Asian, two black and one white),</td>
</tr>
<tr>
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<td></td>
</tr>
<tr>
<td>Source</td>
<td>Study design</td>
<td>Aims of study</td>
<td>Outcome measures</td>
</tr>
<tr>
<td>-----------------------------</td>
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<td>----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| Commander et al. (1997b)    | Two single sample prospective cohort nine months – 13 months recruitment.    | To provide a comprehensive understanding of the pathway into in-patient psychiatric care; the treatment received during the time spent in hospital; and needs for care three months after discharge; by people from black and ethnic minorities, and their level of satisfaction | • In-patient experiences (in-patient service questionnaire - reliability and validity of scale required).  
• Satisfaction.  
• Conducted by four female interviewers - one Asian, two black and one white.  
• Social behaviour - social behaviour scale (SBS) & mental state Krawiecka and Goldberg scale (K&G).  

Interviews and medical records (interviews obtained three months after discharge).                                                                                                                          | • Demographics similar, except whites were more likely to be younger and female.  
• Similar to first sample.  
• Violence in past year - violence to family more likely to be Asians ($\chi^2=7.3$ $p=0.03$). Violence to staff more likely to be black ($\chi^2=8.6$ $p=0.01$). Blacks were also reported to be more violent towards other people whilst in-patients - 35% compared with 13% Asians and 10% whites ($\chi^2=9.8$ df=2 $p=0.007$).  
• Blacks were also significantly more likely than either Asians or whites to be detained under the Mental Health Act and be confined to the ward.  
• Medication was non-significant.  
• Researchers had numerous difficulties throughout the study in getting staff to complete schedules. Described as chaotic and incomplete. Scales were not repeated. |

**Reviewer’s comments**

Some service users continued into second sample; others were new to the study.
<table>
<thead>
<tr>
<th>Source</th>
<th>Study design</th>
<th>Aims of study</th>
<th>Outcome measures</th>
<th>Results</th>
</tr>
</thead>
</table>
| Davies et al. (1996) | Cross-sectional annual prevalence study (1991). | To compare the risk of detention under the Mental Health Act 1983 in a representative group of people with psychotic disorders from different ethnic groups. | • For psychosis ICD 10 classification.  
• Compulsory admissions collected from Mental Health Act Offices.  
• Ethnic group collected from case notes based on classification of the Office of Population Censuses and Surveys.  
• Half of all cases were random selected to self-identify ethnic group to validate the case record category. | • Annual period prevalence 1991.  
• Demographic details for both black and white participants did not differ except blacks were younger: mean age 47.4=white, 35.3=black Caribbean, 31.2=black African.  
• Detention under the Mental Health Act: reference group white.  
• Black Caribbean OR 3.67 [2.07, 6.50].  
• Black African OR 2.88 [1.04, 7.95].  
• (OR adjusted for age).  
• Black Caribbean participants were over three times more likely, and black African participants were nearly three times more likely to be detained under the Mental Health Act than white participants. They were also detained more often under sections 2, 3, and 136 of the Act. They were also more likely to be admitted to a psychiatric intensive care facility or prison. |

**Reviewer’s comments**

Quality of study was good.
<table>
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<tr>
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</thead>
</table>
| Dixon et al. (2000)    | Retrospective chart review.        | To explore the nature of the reasons for detention; the extent to which these were associated with service user characteristics; and the extent to which the two medical practitioners involved in each case agreed on their reasons (analysed by thematic content analysis). | Reasons for detention.  
Selected legal criteria for detention.  
Demographic variables: gender, age, ethnic group and diagnosis.  
Agreement of practitioners on reasons for detention. | Black=18%, Asian=14%, white=61%, other ethnic=7%.  
More men than women were described as a danger to others - 60% men 38% women $\chi^2=7.95$, $p=0.01$.  
Ethnic collapsed into dichotomous variable: white N=100 and ‘other ethnic’ N=63.  
Significantly more ‘other ethnic’ people were described as a danger to others - 42% white and 60% ‘other ethnic’ $\chi^2=4.79$, $p<0.05$.  
A significant association was found between ethnicity and diagnosis, $\chi^2=12.62$, $p<0.05$. Suggesting that reasons for detention were based on ethnic (other ethnic) group and  
A significant association was found between diagnosis, those with schizophrenia and non-compliance with medication as a reason for detention. $\chi^2=10.28$, $p<0.05$.  
In 22% of detentions there appeared to some disagreement between professionals about the extent to which the service user was being detained for the protection of others.  
The extent to which these results reflect inter-relationships between demographic and clinical variables or practitioners stereotypical assumptions remains unclear. |
| Country: UK            | Setting: inner city mental health trust. | Populations: all compulsory admissions under section 2 of the Mental Health Act 1983 within a 12-month period. N=163 detentions, equivalent to 155 service users-M=49%, mean age 38 years |                                                                            |                                                                         |
| Evidence level: 2-     |                                    |                                                                                |                                                                            |                                                                         |

**Reviewer’s comments**
- This study did not set out to determine racial bias. The ethnic group was collapsed and may under-estimate the effect of bias in detention, in particular of Afro-Caribbeans.
| Source                 | Study design            | Aims of study                                                                                                                                                                                                 | Outcome measures                                                                                                                                                                                                 | Results                                                                                                                                                                                                 |
|------------------------|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Feinstein & Holloway (2002) | Cross-sectional.        | To examine the differences in reasons for admission and other characteristics amongst white, Afro-Caribbean and black service users.                                                                 | Demographic characteristics: male =63%, white =48%, Afro-Caribbean =42%, black African =10%, Asian =3%.                                                                                                     | 80% were compulsorily detained.                                                                                                                                                                                                                                           |
| Country: UK            | Setting: psychiatric intensive care unit (PICU). | Population: a consecutive sample of 107 admissions recruited over five months.                                                                                                                                  | Psychiatric assessment - DSM-IV.                                                                                                                                                                                                                                | 40% were schizophrenic. There were no significant differences in demographics of age, marital status or living setting between ethnic groups.                                                                                       |
| Evidence level: 2-     |                          |                                                                                                                                                                                                             | Global assessment of function scale (GAFS) via interviews on admission and discharge.                                                                                                                                                                           | White and black African service users were more likely to have had a first admission than Afro-Caribbean service users \( \chi^2 = 8.8 \text{ df}=1 \text{ p}=0.003 \) and to be re-admitted \( \chi^2 = 3.5 \text{ df}=1 \text{ p}=0.06 \). |
|                        |                          |                                                                                                                                                                                                             | Ethnic comparisons - Asians excluded from analysis and the ethnic groupings were white, Afro-Caribbean and black African.                                                                                                                                           | GAFS: Afro-Caribbeans showed greater impairment on admission, compared with white service users \( p=0.05 \) and tended to have a longer stay.                                                                                 |
|                        |                          |                                                                                                                                                                                                             | Authors state there were no differences in the occurrences of violent behaviour on the ward.                                                                                                                                                                  | Afro-Caribbeans were significantly more likely to be diagnosed with schizophrenia than white service users but not black Africans \( \chi^2 = 7.8 \text{ df}=1 \text{ p}=0.005 \) Whites were significantly more likely to be diagnosed with personality disorders \( \chi^2 = 9.3 \text{ df}=1 \text{ p}=0.002 \). |
|                        |                          |                                                                                                                                                                                                             | More Afro-Caribbeans were detained under long-term treatment disorders (section 3) than white service users \( \chi^2 = 3.6 \text{ df}=1 \text{ p}=0.06 \).                                                                                                       | The unit had a high proportion of Afro-Caribbean service users who had a poor level of functioning on admission. The authors argue that the results do not support the view of systematic misuse of PICU, and propose a number of possible explanations for the effect - for example, difficulties with engagement services, effects of cannabis use, or alienation and conflict on open wards. |

**Reviewer’s comments**

This study was conducted in 1993. Study design was not clear.
<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Hoptman et al. (1999)</td>
<td>Single sample prospective (three-month follow-up). Setting: forensic psychiatric hospital. Population: 183 male admissions.</td>
<td>To investigate service user characteristics associated with the clinical prediction of assaultive behaviour.</td>
<td>• Variables (patient characteristics, including race), influencing clinician prediction are compared with those influencing actual assaultive behaviour. Violent incidents were measured by a modified scale for aggressive and agitated behaviours.</td>
<td>• Clinicians rate of correct prediction of assaultive behaviour = 71%, diagnostic sensitivity of 54% and specificity 79%. • Race as a factor associated with clinical prediction was not associated with actual assaultive behaviour. African Americans were over-represented in the predicted group, whereas Caucasians were under-represented. • $\chi^2 = 7.8$ df 3 p&lt;.05.</td>
</tr>
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</table>

**Reviewer’s comments**
Authors state study sample different from other forensic populations, due to the proportion of ethnicity being higher. Consecutive sampling with 54% participation rate. Authors state no significant difference between participants and non-participants. There was a loss of 16 participants in the final sample; authors state participants and non-participants did not differ.
<table>
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</thead>
<tbody>
<tr>
<td>Hutton et al. (1992)</td>
<td>Retrospective chart review.</td>
<td>To investigate the applicability of the overt-hostility scale to black service users, and its validity in a forensic setting, where psychological assessment is used to identify treatment needs of criminal offenders.</td>
<td>• Instant offence.</td>
<td>• Race was the only variable to emerge as a determinant of overt-hostility (O-H) score.</td>
</tr>
<tr>
<td></td>
<td>Setting: a maximum-security state forensic facility.</td>
<td></td>
<td>• Psychiatric diagnosis.</td>
<td>• Black service users had higher O-H scores than white service users $F(1,410) = 23.726, \ p &lt; .001$.</td>
</tr>
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<td>Population: 412 randomly selected male psychiatric in-patients and a randomly selected sub sample 224 to provide more in-depth information.</td>
<td></td>
<td>• Employment history.</td>
<td>• A higher proportion of black service users exceeded the higher level T score 69 cut-off point in the scales interpretation of hostility than white service users $\chi^2(1, N=412) = 14.55, \ p &lt; .001$.</td>
</tr>
<tr>
<td></td>
<td>Country: US</td>
<td></td>
<td>• Incidents of physical assault.</td>
<td>• Comparison of mean O-H scores by race and personality type ($N=34$ sub-sample) $F(1,97) = 4.23, \ p &lt; .05$.</td>
</tr>
<tr>
<td></td>
<td>Evidence level: 2-</td>
<td></td>
<td>• Race - comparing black vs. white outcome is the difference.</td>
<td>• ANOVA comparisons of O-H scores of black and white service users by criminal history and by clinical problem type were non-significant, as were race x criminal history and personality x race interaction.</td>
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<td>• Potential confounders of education and socio-economic status were shown not to significantly predict O-H scores.</td>
<td>• The findings indicate that using the O-H scale with black service users could lead to an erroneous interpretation of a propensity for aggressive or violent acts.</td>
</tr>
</tbody>
</table>

**Reviewer's comments**

No details given on randomisation procedure.

No information provided on race categories - given as black and white. In the US, Hispanics are another important minority.
Kho et al. (1998)  
Country: UK  
Evidence level: 2+  
Prospective with five-month follow-up.  
Settings: six adult psychiatric wards in two London hospitals.  
Population: all in-patients on wards N=360.  
To identify factors associated with aggressive incidents in psychiatric acute admission wards.  
Weekly reports on levels of aggression were ascertained by two nurses independently using MOAS (the modified overt aggression scale) of which the mean score = the overall aggression score (actual records =1147).  
Factors potentially affecting aggression.  
Patient factors – for example, gender, ethnicity, ward factors, effect of stage of admission.  
MOAS records N=1147.  
Demographic variables were: mean age 39, 55% male, ethnic-Caucasian=55%, Asian=15%, Afro-Caribbean=14%, 47% had schizophrenia and 13% an affective disorder.  
No significant results were found for ethnicity and the authors conclude that the results provide little support for the stereotypical view of aggression being associated predominately with young Afro-Caribbean men diagnosed with schizophrenia.  
This study found Asian service users displaying more aggression than others, which is not consistent with other studies. Both Asians and Afro-Caribbeans were of similar proportions on the wards.  

**Reviewer's comments**  
This has been reported in prediction review and therefore only relevant results to this review are included.  
Authors report that reliability of MOAS instrument would have been increased if specific training to staff had been given.
<table>
<thead>
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</table>
| Lawson et al. (1984) | Prospective. | To test the hypothesis that racial bias in treatment decisions can be documented. | • Measures of violent behaviour undertaken by nurses with the modified lion scale*.  
• Inter-rater reliability .84 by rank-order correlation.  
• Psychopathology was measured by the brief psychiatric rating scale.  
• Neuroleptic dosages and serum levels and clinical response.  
  * The lion scale measures service user behaviour - for example, assault and staff behaviour - decision to seclude or restraint. | • Lion scale: black vs. white other p<.0001.  
• Examination of assault data showed no blacks committed more than one act of violence, whereas 7% whites committed two or more acts.  
• There was no significant difference between race and psychopathology.  
• Mean neuroleptic serum levels between black and whites was non-significant.  
• Substantial and significant differences were noted in the behavioural measure of in-patient violence. Analysis dichotomised results into violence against others, and violence against self.  
• This study concludes that whites appear to be more violent, and make far more threats and commit more self-destructive acts, whilst control for factors such as neuroleptic dosage and serum levels and psychopathology. |

**Reviewer's comments**
- US veterans are a unique group due to military experience.
- Small sample size, therefore findings lack statistical power and generalisability.
- Selection of participants not clear.
- Study design and analysis for control of confounding factors not clear.
## Lloyd & Moodley (1992)

**Country:** UK  
**Evidence level:** 2-

**Study design:** Cross-sectional survey.  
**Setting:** Psychiatric hospital, south London.  
**Population:** All psychiatric in-patients on census day N=145.

**Aims of study:** To survey psychotropic prescribing in the psychiatric in-patient population, in order to discover factors associated with the decision to medicate, and whether ethnicity was an independent variable associated with the dose and type of medication.

**Outcome measures:**  
- Medication data: type and dose collected from drug charts.  
- Disturbed behaviour - by staff assessment service users' notes.  
- Diagnosis – patients' notes and ICD-9.  
- Compulsory detention.

**Results:**  
- There was only sufficient data on 138 service users: 101 non-black and 37 black.  
- Black service users (62%) more likely to have clinical diagnosis of psychosis (ICD 291-299) than non-blacks (36%) Yates $\chi^2 = 7.781$, df = 1, $p=0.007$.  
- Black service users 86.5% were more likely than non-black service users (60.4%) to be receiving anti-psychotic medication Yates $\chi^2 = 7.243$, df=1, $p=0.007$.  
- Becomes non-significant when adjusted for diagnosis and compulsory detention. 62% of black service users are diagnosed with psychosis, whereas only 36% have psychosis, therefore this result is not unexpected.  
- Black service users with psychosis (56.8%) were significantly more likely to be receiving a depot preparation than non-blacks with psychosis (24.9%) $\chi^2 = 12.482$, df=1, $p<0.001$. Adjusted for ethnicity, age, sex, and diagnosis OR 1.18-2.72 $p=0.006$.  
- Significantly more black service users (67.6%) were detained under the Mental Health Act than non-blacks (29.7%) $\chi^2 = 16.197$, df =1, $p<0.0001$. Adjusted for age, sex, diagnosis, and violence history OR 1.97 $p=0.002$.  
- Black service users were more likely to have been involved a violent incidence during the index admission $\chi^2 = 12.285$, df =1, $P=0.0001$. Adjusted for age, sex, diagnosis OR 1.81 OR=0.006.  
- There is a possible relationship for psychiatric in-patients between compulsory detention, disturbed behaviour, depot medication and being black that is not satisfactorily explained by diagnosis alone.

**Reviewer’s comments:**  
- Authors highlight the relationship of the influence on diagnosis and treatment. Reporting bias discussed, as socio-demographic data was obtained from case notes.
Country: US
Evidence level: 2-

Source Study design Aims of study Outcome measures Results
Retrospective chart review.
Setting: locked, university-based, short-term in-patient psychiatric unit.
To evaluate characteristics of service users whom clinicians accurately assessed as being high or low risk for violence, and service users for whom clinicians over or under-estimated the risk.
• Accuracy of clinicians’ estimates of the service users potential for violence.
• Medical charts reviewed by eight staff and inter-rater reliability of kappa=0.75.
• Ratings on N=226 made by 60 physicians averaging four each. Scale of 0% (definitely will not attack someone) to 100% (definitely will attack someone).
• Violent behaviour measured on the overt aggression scale. In-patient violence restricted to acts of physical aggression against other people.
• This study has been reported in the prediction review and therefore only relevant data is reproduced here.
• A multinominal logit analysis was used to identify service user characteristics associated with accurate and inaccurate clinical assessment for potential violence.
• The risk of violence was over-estimated among persons who were non-white: non-white service users were more likely to be false positives, compared to true negatives. Also service users whose risk of violence was under-estimated (false negatives) were more likely to be white, in contrast to those whose violence was over-estimated (false positives).
• See extracted table below.
• Those who are non-white (all those not of white race) are seven times more likely to be falsely predicted for violence and 57% less likely to be given the correct prediction classified as ‘definitely will not attack anyone’.
• False negatives: white service users identified as low risk who were then violent.
• False positives: non-white service users identified as high risk who were not violent.

Reviewer’s comments
• Sampling strategy unclear.

<table>
<thead>
<tr>
<th>Variable</th>
<th>True negatives vs. true positives</th>
<th>True negatives vs. false positives</th>
<th>True negatives vs. false negatives</th>
<th>False positives vs. true positives</th>
<th>False positives vs. false negatives</th>
<th>True positives vs. false negatives</th>
</tr>
</thead>
<tbody>
<tr>
<td>White race</td>
<td>OR 0.69 [0.27-1.78] ns*</td>
<td>OR 0.43 [0.27-0.83]</td>
<td>OR 3.04 [0.66-13.91] ns</td>
<td>OR 1.63 [0.65-4.08] ns</td>
<td>OR 7.15 [1.50-34.11]</td>
<td>OR 4.38 [0.83-23.07] ns</td>
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<tr>
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| Minnis et al. (2001) | Survey – postal questionnaire. Settings UK. Population: random sample of 1,000 British psychiatrists obtained from the Royal College of Psychiatrists' database. | To establish whether racial stereotyping occurred amongst British psychiatrists in rating black service users as more violent than white service users, when shown either a picture of a black man or a white man. | A selection of questions asked:  
  - risk of violence to others  
  - likely diagnosis – for example, schizophrenia  
  - likely to be a management problem  
  - rapport likely to be difficult to establish. | 823 were contactable. Response rate was 59% N=485 available for analysis. (10% of British psychiatrists). The power of the study to detect an expected mean (SD) risk of violence of 2.41 (1.76) v 2.87 (1.53) is given as 85% at the 5% level.  
  
  Black N=232                  White N=253  
  Risk of violence to others  
  20.4                  19.9                  p=0.005  
  Likely diagnosis – for example, schizophrenia  
  17.3                  13.5                  p<0.0001  
  Management problem  
  16.1                  16.6                  p=0.001  
  Rapport difficult to establish  
  18.3                  16.2                  p=0.01  
  Likely to ask:  
  Had a criminal record  
  16                  15                  ns  
  Had recently used illegal drugs  
  96                  96                  ns  
  Authors conclude psychiatrists did not rate black service users as more violent than white, though they were more likely to ask other questions of black service users, such as need for learning support and social work. They conclude racial stereotyping at first interview does not account for the inequalities seen in secondary care. |

**Reviewer's comments**
- Authors suggest a possible bias of over compensation by those that had the picture of a black man because of awareness of racial bias towards black service users. Also suggested that the study hypothesis had been guessed. This needs to be considered in the present climate of increased awareness of racial discrimination. This was a self-report exercise and may skew the results more favourably towards non-stereotyping because of the self-awareness of race issues amongst doctors.
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<tr>
<td>Morley et al. (1991)</td>
<td>Qualitative. Setting: three inner London health districts. Population: consecutive admissions (over nine-month period) of Afro-Caribbean service users experiencing psychotic symptoms in regular contact with relative or partner. (This included 10 informally admitted patients and 15 compulsorily admitted patients). Excluded: organic base for diagnosis and relative with psychosis.</td>
<td>To gain descriptive information about the problems faced by Afro-Caribbean families with a psychotic member in the early stages of illness, and to test hypotheses about their influence on the process of admission.</td>
<td>• Present state examination (PSE). • Disturbed behaviour rating scale, added questions on dangerousness of service user prior to admission. • Difficulties and beliefs – open-ended questions. • Attitudes to psychiatric hospitals - questionnaires compiled for study. • Help, and satisfaction with help.</td>
<td>40 service users met inclusion criteria. PSE not obtained on five service users. Eight refused permission to interview relative. Two relatives declined to be interviewed. Total sample for analysis was of 25 (10 informal and 15 compulsorily detained service users). • Demographic: 60% male, informal mean age 27 and mean age of compulsory group 33. 78% born in West Indies but all had been living in the UK for at least 20 years. 60% of relatives were mothers and 40% were wives, husbands, children or siblings. • Comparisons between dangerous and non-dangerous - 56% of 'dangerous group' relatives wanted help quicker. 67% wanted their relative to be persuaded to take medication. 53% of compulsory detained service users were not considered to be dangerous by their relative. Twice as many relatives attributed the difficulties to stress. • Relatives' explanations for service users' behaviour - no differences between informal and compulsory detained. • Attitudes to services – more than 50% of sample of relatives thought being in psychiatric hospital was like prison; however 64% thought hospital was a good place to get away from it all. • Path of admission - 60% of admissions occurred within a month of the onset of symptoms • Conclusion: the study revealed police involvement was associated not with relative need, but with initial response of health or social care professional and their expectations of dangerousness in the service user, although the hypothesis did not set out to test this.</td>
</tr>
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</table>

Reviewer's comments
- Well-conducted study.
- No respondent validation.
Reubin et al. (1997)

**Country:** US

**Evidence level:** 2-

**Study design:** Retrospective chart review.

Setting: forensic hospital – maximum-security.


To examine the relationship of serum creatine kinase (CK) levels with aggressive behaviour as a function of psychosis and ethnicity in a sample of violent forensic service users.

- CK levels taken routinely on admission.
- Continuous monitoring of violence, using the overt aggression scale, undertaken by nurses provides a mean severity score. Frequency of aggression and type of aggression recorded. MANOVA analysis.
- Other variables: age, weight, height, blood pressure. Use of restraints, intramuscular injections (IM), history of drug or alcohol abuse and diagnosis of schizophrenia on admission. Chi square and t-test analysis.

CK is an indication of muscle tissue abnormalities.

**Results**

- Demographic variables: mean age 28.7yrs, 53% Caucasian, 36% African American and 11% Hispanic.
- 164 provided CK samples; a further 22 were excluded from this sample as ethnicity did not fall into two categories of Caucasian and black African.
- Further exclusions were made due to CK level outliers - three Caucasian and six black African American. Results based on N=133.
- African Americans and Caucasian service users differed in CK levels after adjusted for type and frequency of aggression. $F[1, 130] = 12.06 \ p<.001$ and $F[1, 130] = 13.40 \ p<.001$.
- CK levels for African American service users diagnosed on admission as schizophrenic (n=33; CK=160.1 ± 107.2 t (53) =2.3 p<.05) differed significantly from those without this diagnosis (n=22; CK 106 ± 33.1). Caucasian service users with schizophrenia (n=41; CK 90.6 ± 71.5; t (75) =−.122, p=.90. Did not differ from Caucasian service users without such a diagnosis (n=36; CK=87.8±55.2).
- The authors propose that serum CK differences between African Americans and Caucasians represents a unique physiological reaction to chronic psychological stress. It maybe a biological marker of aggression, with different manifestations in various ethnic studies.

**Reviewer’s comments**

- A detailed discussion sets out the consistency for these results in the context of other studies and other hypotheses that have been explored. No other subsequent studies have been identified.
- There is an attempt to establish a temporal relationship between CK and aggression - aggression raising CK levels or CK provoking aggression. For example, raised levels of CK are part of neuro-biological response and results in more physically aggressive behaviour. The causal pathway is not clear.
- It is noted in the study that similar results have been found in non-psychiatric service users of black African origin.
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</table>
| Secker & Harding (2002)| Qualitative. | To explore the in-patient experiences of African and Afro-Caribbean clients. | • Patient stories of involvement with services - what was helpful, unhelpful, and what would have helped more.  
Data analysis – interviews, transcribed tapes - a staged content analysis using WINMAX. | • 26 in-depth interviews (no drop outs).  
• Demographic - 16 male, two-thirds 25-44 years, 18 African Caribbean and six African. Average length of contact five years. 16 diagnosis of schizophrenia.  
• Analysis represents subjects' most recent experience with themes that included loss of control, experiences of racism, and relationships with staff.  
• Lack of access to talking treatments coupled with reliance on medication to control and contain inappropriate behaviour.  
• Sense of powerlessness and no adequate redress for unsatisfactory treatment.  
• Overt and covert racism - for example, not being understood.  
• Reference to black male stereotypes.  
• Positive accounts of relationships with staff are rare.  
• Participants bewildered and sad at lack of therapeutic relationships. |
Population: a purposive selection of the sample was taken to ensure a cross section in terms of gender, age and diagnosis of clients. N=26. |                                                                                     |                                                                                               |                                                                                             |
| Evidence level: 2-     |                                                                                     |                                                                                     |                                                                                               |                                                                                             |
### Source
Sheehan et al. (1995)

**Country:** UK  
**Evidence level:** 2-

**Retrospective chart review comparison of two geographical areas.**

**Setting:** all acute general psychiatric wards in an inner city hospital (n=4=48 beds) and all the psychiatric wards at semi-rural hospital district general hospital (n=1=35 beds).

**Population:** all violent incident forms for a 12-month period.

### Aims of study
To examine the association of ethnicity on the rate of violent incidents in a socially deprived catchment area.

### Outcome measures
- Number of incidents.
- Serious of incidents – grade
  - involving no damage
  - involving only minor damage or injury not requiring treatment
  - representing serious damage to property or injury requiring treatment.
- Ethnicity of perpetrators.

### Results
- Total incidents 50 at inner city hospital and 41 at semi-rural.
  - Inner: 43  
  - Semi-rural: 11

1 Caribbean people are over-represented in the violent group at the inner city psychiatric wards.

9/16 Caribbean people were detained as service users, compared to 3/14 white European people.

At the inner city hospital, 46% of violent incidents were Caribbean who represented 11% of admissions. Whites represented 66% of admissions but 40% of violent incidents, black Africans constituted 9% of admissions, 6% of incidents.

Difference in proportions significant p<0.05.

Conclusions cannot be drawn regarding over-representation of African-Caribbean people.

### Reviewer's comments
- It is unclear as to how many individuals carried out incidents.
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</table>
| Silver (2000)   | Prospective cohort – 20-week follow-up.                                        | To examine the effects of race and neighbourhood (locality of residence) on violence among persons with mental disorders. | • Violence measured on the conflict tactics scale - measured 20 weeks post discharge and includes re-hospitalisation data.  
• Ethnic self-report.  
• Neighbourhood disadvantage - taken from 1990 census summary tape files. Boundaries are drawn to encapsulate relatively homogeneous populations - details of which are outlined in the paper. Factor analysis was used to reduce possible components to a manageable number. | • 270 service users constituted - 145 neighbourhoods. Neighbourhoods divided into three categories low: n=42, average n=184 and high disadvantage n=44.  
• 33.3% of sample = African American, 90.9% were in the high group and none were in the low group.  
• African Americans were 2.7 (OR) times more likely to be violent than whites, however when adjusted for by neighbourhood disadvantage, this was reduced to 1.28 (OR). This was significant p<0.05. Thus African American and white service users residing in comparable disadvantaged neighbourhoods showed no differences in their rates of violence. |

**Reviewer’s comments**
- This study deals with in-patients discharged from the hospital and are community-based for the follow up period of the study, however the contextual neighbourhood measurement seems relevant whether in or out of hospital.  
  ‘Neighbourhoods’ is relevant in UK context. This study is reported as it attempts to show confounding according to locality of the individual’s residence, and how this may affect reporting of results of violent incidents.
<table>
<thead>
<tr>
<th>Source</th>
<th>Study design</th>
<th>Aims of study</th>
<th>Outcome measures</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strakowski et al. (1993)</td>
<td>Retrospective chart review.</td>
<td>To investigate whether clinical over-diagnosis of schizophrenia in non-white service users exists in the public sector, and whether co-morbid diagnoses contributed to primary diagnoses.</td>
<td>• Diagnosis and co-morbidity - drug, alcohol, and other psychiatric diagnoses - measured by DSM-III-R.   • Discharge dose of anti-psychotic medication given in haloperidol equivalents.</td>
<td>• Black service users were diagnosed with schizophrenia more than white service users by clinicians OR 5.1 (adjusted for sex, drug abuse, alcohol abuse) CI [2.4-10.] p&lt;.0001. &lt;br&gt; • Type and frequency of co-morbid diagnoses did not differ significantly between races.  &lt;br&gt; • Anti-psychotic medication was prescribed in higher doses to black service users than white t=3.3, df= 171, p&lt;.001. &lt;br&gt; • Authors state there may be possible racial bias as diagnosing service users can be a learnt behaviour, or black service users present with different symptom intensity or type than white service users.</td>
</tr>
<tr>
<td>Evidence level: 2-</td>
<td>Population: 173 service users with primary diagnoses of psychotic disorders.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Reviewer’s comments**

- Note the ethnicity of the diagnosing clinicians - two black, two Indian and one Filipino.
- Clinicians use of DSM-III-R, not determined or validated.
- Selection of racial grouping not clear.
Strakowski et al. (1995)

Country: US

Evidence level: 2-

<table>
<thead>
<tr>
<th>Source</th>
<th>Study design</th>
<th>Aims of study</th>
<th>Outcome measures</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Retrospective chart review.</td>
<td>To observe whether there are racial differences in diagnosis and disposition</td>
<td>• Diagnosis measured by DSM-III-R.</td>
<td>Staff racial mix White - Black</td>
</tr>
<tr>
<td></td>
<td>Setting: psychiatric emergency service (form of A&amp;E, not in-patient).</td>
<td>of service users visiting a psychiatric emergency service.</td>
<td>• Disposition (referral for treatment) - for example, public or private, in-patient, outpatient, other agencies.</td>
<td>Nurses 60 40</td>
</tr>
<tr>
<td></td>
<td>Population: 490 randomly selected patients N=273; white (56%) N= 215; black (44%); mean age 35.2.</td>
<td></td>
<td>• Other information obtained included: substance abuse, use of physical restraints and restraint medication, homicidal ideation.</td>
<td>Social workers 81 15</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Clinicians 83 17</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Black race was significantly associated with schizophrenia compared to whites:</td>
<td>• Black race was significantly associated with schizophrenia compared to whites: OR=1.6 CI [1.0, 2.5] p&lt;.03 adjusted for age, sex and insurance status (SES) socio-economic status. Male sex was significantly associated with schizophrenia OR =2.3 CI[1.5, 6.0] p=.0003.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Age was significantly associated with schizophrenia: OR=2.3 CI [1.5, 3.6] p&lt; .0000.</td>
<td>• Age was significantly associated with schizophrenia: OR=2.3 CI [1.5, 3.6] p&lt; .0000.</td>
</tr>
<tr>
<td>Reviewer's comments</td>
<td>• Follow-up to previous 1993 study.</td>
<td></td>
<td></td>
<td>• Black race was significantly associated with state hospitalisation OR =2.7 CI [1.3, 5.5] p&lt; .006 adjusted for diagnosis, age, sex, insurance status, suicidal and homicidal ideation scores, suggesting that blacks were more likely to receive hospital treatment rather than whites.</td>
</tr>
<tr>
<td></td>
<td>• Authors propose limits on generalisability of these findings, due to limits of diagnostic procedure, and insurance status is not a sensitive measure for SES.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Wilson & Francis (1997)

**Country:** UK  
**Evidence level:** 2-

<table>
<thead>
<tr>
<th>Source</th>
<th>Study design</th>
<th>Aims of study</th>
<th>Outcome measures</th>
<th>Results</th>
</tr>
</thead>
</table>
| Wilson & Francis (1997) | Descriptive survey (no follow-up). Setting: local Mind Associations, voluntary and black groups. Population: African-Caribbean and African service users. N=100. | To offer a snapshot of African-Caribbean and African people's experiences of mental health services. | Postal questionnaire with a mix of closed and open questionnaires on diagnosis, nature of services received, experiences of social exclusion and discrimination, and views on mental health services. | • 1,000 sent out 100 returned =10% response rate.  
• 43% diagnosed with schizophrenia.  
• 53% referred by GP.  
• 18% under the MHA.  
• 17% referred by police.  
• 15% self-referral.  
• Most common form of treatment was psychiatric hospital (85%), 19% had special hospital or medium secure unit experience.  
• 95% had been treated with drugs.  
• 66% found their key worker helpful.  
• 36% felt that no mental health professionals actually were aware of their cultural and ethnic origin.  
• 36% expressed dissatisfaction with treatment  
• 36% stated being sectioned because of their ethnic origin (36% of 18%). |

**Reviewer's comments**  
Not a representative response. Authors express the view that the low response rate reflects that the questionnaires did not reach the recipients, rather than a refusal to respond.  
Authors conclude African-Caribbeans/Africans surveyed feel misunderstood because they are feared, stereotyped or ignored. The stereotypes operate in complex ways as people are seen as black, mad, dangerous and inadequate.
Appendix 2: Ethnicity review - excluded studies

<table>
<thead>
<tr>
<th>Source</th>
<th>Reason excluded</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bond et al. 1988</td>
<td>• Average age of participants was 15.</td>
</tr>
<tr>
<td></td>
<td>• Sample size of black patients n=9 and therefore too small.</td>
</tr>
<tr>
<td>Carpenter et al. 1988</td>
<td>• Does not test for bias in treatment but by location.</td>
</tr>
<tr>
<td>Fabrega et al. 1988</td>
<td>• Study design unclear.</td>
</tr>
<tr>
<td>Greenblatt &amp; Davis 1992</td>
<td>• Study design unclear.</td>
</tr>
<tr>
<td>Gudjonsson et al. 1999</td>
<td>• Does not examine bias.</td>
</tr>
<tr>
<td>Marx &amp; Levinson 1988</td>
<td>• Deals with US law and therefore does not extrapolate to the UK.</td>
</tr>
<tr>
<td>Singh et al. 1997</td>
<td>• Study design unclear.</td>
</tr>
<tr>
<td>Toch et al. 1987</td>
<td>• Prison inmates, therefore outside scope.</td>
</tr>
<tr>
<td>Volvaka et al. 1995</td>
<td>• Deals with violent incidents committed outside hospital, therefore outside scope.</td>
</tr>
<tr>
<td>Wang &amp; Diamond 1999</td>
<td>• Ethnicity considered but does not examine bias.</td>
</tr>
</tbody>
</table>
Appendix 3: Ethnicity review search report

Major databases

The major databases MEDLINE, EMBASE, PSYCNINFO, Biological Abstracts and CINAHL were searched first. These are large literature databases, and allow entry and refinement of complex, saveable search strategies. The search strategies followed the same pattern as the intervention searches at this stage in the process: a search strategy developed for mental disorders and for violence (etc.) was used first:

1. explode "Mental-Disorders"/ all subheadings
2. mental* or psychiatri* or psycholog* or forensic or paranoi* or psychos?s or psychotic or schizo* or anxiety or hystera* or manic* or hypo?man* or depress* or mood* or affective or bipolar
3. dual near4 diagnos?s
4. impuls* near4 controll*
5. personalit* near disorder*
6. delud* or delusive or delusion*
7. 1 or 2 or 3 or 4 or 5 or 6
8. violent* or agonistic or disturb* or hostil* or agitat* or anger or angry or un?toward or rage* or bizarre or harass* or intimidat* or aggress* or danger* or attack* or threat* or abus* or combative or assault* or disrupt*
9. 7 and 8

For the ethnicity search, the following search strategy was added to the above:

10. (race or races or racial* or ethnic*)
11. (asian* or african* or black or indian* or pakistani* or bangladesh* or latin* or non?white* or multi?cultur* or afro-caribbean)
12. 10 or 11
13. 9 and 12

Notes

1. The database platform used was Silver Platter (in its Windows version, WinSpirs). Other platforms, such as Ovid, require different conventions and symbols, but the strategies will translate directly. Database terminology varies between databases and different versions of databases.

2. Search statement 1 above represents a thesaurus (Silver Platter) or subject (Ovid) search – in this example a MESH search from MEDLINE – i.e. a search on indexer headings or ‘descriptors.’ On different databases, thesaurus terms vary: so 1. above would become, on EMBASE for example: 1. explode ‘mental disease’/all subheadings.

3. The other search statements represent text-word or free text or ‘natural language’ searches (again, terminology varies), searching author terms in titles or abstracts of database records. In general, free text search terms have been preferred – once a check has been made that any corresponding descriptors and any nested terms would be included – since these are transferable between major databases (some other sources do not support descriptor searching) and indexing may be inconsistent or unreliable or very high-sensitivity searches of the kind required here. The descriptors can be searched with the free text terms (see note 4), and processing may be quicker for a complex strategy.

4. The free text search strings were suffixed with field search qualifiers so that the terms are searched only in the major fields of each record (title, abstract and descriptors), and not, for example, in journal title or address fields. Again, this differs between databases – for example:
Violence in ti,ab,mesh (MEDLINE)
Violence in ti,ab,dem,der (EMBASE) etc.

5. The operator ‘near’ searches terms (or sets of alternative terms) within the same sentence of a record title or abstract – ‘and’ searches simultaneous occurrences anywhere in the records. (The number qualifier – for example, near4 – searches the terms within that number of words in the sentence).

6. The ? symbol is a ‘wildcard’ standing for 1 or 0 characters (including a hyphen) within a word, on Silver Platter databases.

7. The * (asterisk) symbol is a ‘truncation’ or ‘stemming’ symbol, which captures variant word-endings by including any number of characters (including 0) at the end of a word, on Silver Platter databases.

Other sources

A large number of databases and web sources that do not support searching using complex search strategies were searched for all or any interventions for violent behaviour (etc.) involving mental disorders. This includes the Cochrane Library databases, which are not large, and best searched broadly, AMED singularly, SIGLE for ‘grey’ literature, HMIC or health care grey literature, ASSIA for social science literature, large research journals databases such as ZETOC and the Web of Science which only support simple one- or two-term search strategies, and similarly, specialist web search engines such as BIOME. Many of the web-based sources can only be ‘trawled’ or even ‘sampled’ rather than ‘searched’ thoroughly. These other sources are listed in the literature search log for the mental health specific concerns searches.

Jo Hunter
Information specialist
LITERATURE SEARCH LOG

Guideline: (Project co-ordinator) VIOLENCE – SPECIFIC CONCERNS - ETHNICITY

Date searches required by: (Project co-ordinator) 30 June 2003

Review question: (Project co-ordinator to complete) Does the race/ethnicity of a patient or staff member make a difference to how they are treated when they are involved in a violent incident in in-patient psychiatric settings?

<table>
<thead>
<tr>
<th>Study design</th>
<th>All</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patients</td>
<td>Service users</td>
</tr>
<tr>
<td>Settings</td>
<td>In-patient psychiatric settings</td>
</tr>
<tr>
<td>Interventions</td>
<td>All interventions: short-term etc. – management of violence</td>
</tr>
<tr>
<td>Outcomes</td>
<td>Racial intolerance, discrimination, harassment</td>
</tr>
</tbody>
</table>

Databases and when searched

<table>
<thead>
<tr>
<th>Core databases</th>
<th>Dates covered by search</th>
<th>Date search ran</th>
<th>Number of citations (incl. duplicates)</th>
<th>Name of file in which citations stored</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cochrane Library:</td>
<td>1985-2003/4</td>
<td>18.6.03</td>
<td>2</td>
<td>Raceco1.txt</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Raceco2.txt</td>
</tr>
<tr>
<td>NHS EED</td>
<td>1985-2003/4</td>
<td>18.6.03</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>MEDLINE</td>
<td>1985-2003/1</td>
<td>8.4.03</td>
<td>48</td>
<td>Racema.txt</td>
</tr>
<tr>
<td>EMBASE</td>
<td>1985-2002/11</td>
<td>8.4.03</td>
<td>37</td>
<td>Racee1.txt</td>
</tr>
<tr>
<td>CINAHL</td>
<td>1985-2002/12</td>
<td>8.4.03</td>
<td>9</td>
<td>Racec1.txt</td>
</tr>
</tbody>
</table>
### Additional databases

<table>
<thead>
<tr>
<th>Database</th>
<th>Dates covered by search</th>
<th>Date search ran</th>
<th>Number of citations</th>
<th>Name of file in which citations stored</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMED</td>
<td>1985-2003/5</td>
<td>18.6.03</td>
<td>30</td>
<td>Etha.dat</td>
</tr>
<tr>
<td>BNI</td>
<td>1985-2003/2</td>
<td>18.6.03</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>ECONLIT</td>
<td>1985-2003</td>
<td>18.6.03</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>SIGLE</td>
<td>1985-2003</td>
<td>18.6.03</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>HMIC</td>
<td>1985-2003/1</td>
<td>18.6.03</td>
<td>8</td>
<td>Ethh.txt</td>
</tr>
</tbody>
</table>

### Current research

<table>
<thead>
<tr>
<th>Database</th>
<th>Dates covered by search</th>
<th>Date search ran</th>
<th>Number of citations</th>
<th>Name of file</th>
</tr>
</thead>
<tbody>
<tr>
<td>CCT &amp; NRR</td>
<td>1997-2003/6</td>
<td>18.6.03</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Trip</td>
<td>1997-2003</td>
<td>18.6.03</td>
<td>1</td>
<td>printed</td>
</tr>
<tr>
<td>Biome</td>
<td>1997-2003/6</td>
<td>18.6.03</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

### Sampled from

<table>
<thead>
<tr>
<th>Database</th>
<th>Dates covered by search</th>
<th>Date search ran</th>
<th>Number of citations</th>
<th>Name of file</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASSIA</td>
<td>1985-2003</td>
<td>18.6.03, 18.6.03</td>
<td>188, 3</td>
<td>(Allas.txt), Ethas.txt</td>
</tr>
<tr>
<td>ZETOC</td>
<td>1993-2003/6</td>
<td>18.6.03, 18.6.03</td>
<td>77, 82</td>
<td>(Allz1.txt), (Allz2.txt)</td>
</tr>
<tr>
<td>Web of Science</td>
<td>1981-2002/5</td>
<td>28.5.02</td>
<td>28.5.02</td>
<td>28.5.02</td>
</tr>
<tr>
<td>---------------</td>
<td>------------</td>
<td>--------</td>
<td>--------</td>
<td>--------</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2</td>
<td>2</td>
<td>187</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Template updated: 20 May 2003
Appendix 4: Critical appraisal of *Breaking the circles of fear: a review of the relationship between mental health services and African and Caribbean communities*

AGREE appraisal tool (carried out independently by two reviewers)


**Publisher:** Sainsbury Mental Health Centre London. Developed by: Sainsbury Mental Health Centre

### Scope and purpose (domain 1)

<table>
<thead>
<tr>
<th>1. The overall objective(s) of the guideline is (are) specifically described.</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comments: The aims of the project are clearly presented (p8/14).</td>
<td>4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2. The clinical question(s) covered by the guideline is (are) specifically described.</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comments: The aims appear to be the clinical questions being addressed and are given at the beginning of every chapter. These aims have also been determined by the methodological approach of the co-operative enquiry. (p84) This is more of a report than a guideline, so this question is not entirely relevant.</td>
<td>2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3. The patients to whom the guideline is meant to apply are specifically described.</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comments: The target population is specifically described throughout.</td>
<td>4</td>
</tr>
</tbody>
</table>

### Stakeholder involvement (domain 2)

<table>
<thead>
<tr>
<th>4. The GDG group includes individuals from all the relevant professional groups.</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comments: There is a steering group that manages the project and an advisory group of relevant professionals. Service user participation seems absent from the groups. There seems to have been a great deal of input from service user organisations, but no input from nursing organisations.</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>5. The patients’ views and preferences have been sought.</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comments: This is the whole purpose and thrust of the report. (p84) This has been achieved through a variety of means, including focus groups and interviews</td>
<td>4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>6. The target users of the guideline are clearly defined.</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comments: The target users of the recommendations are reported. (p8)</td>
<td>4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>7. The guideline has been piloted among target users.</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comments: There is no evidence for this. This is more of a report than a guideline, so this question is not entirely relevant</td>
<td>1</td>
</tr>
</tbody>
</table>
### Rigour of development (domain 3)

<table>
<thead>
<tr>
<th>8. Systematic methods were used to search for the evidence.</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comments: This report does not follow a traditional systematic approach, which has probably been deliberate. The overall approach appears to be systematic and thorough. (p8/84) This is not a guideline and so it does not search for evidence - it is more of a research-centred report.</td>
<td>1</td>
</tr>
<tr>
<td>9. The criteria for selecting the evidence are clearly described.</td>
<td>3</td>
</tr>
<tr>
<td>Comments: The inclusion of evidence and its collection is reported. (p84) Quality of evidence and gradings have not been reported This question is not relevant</td>
<td>1</td>
</tr>
<tr>
<td>10. The methods used for formulating the recommendations are clearly described.</td>
<td>4</td>
</tr>
<tr>
<td>Comments: They appear to be generated from the key findings. There is no description of how the recommendations were generated by the advisory group, but they are described as a process of argument based on findings. (p74 - 82) The recommendations are based on the findings of the research. This is apparent.</td>
<td>3</td>
</tr>
<tr>
<td>11. The health benefits, side effects and risks have been considered in the formulating the recommendations.</td>
<td>3</td>
</tr>
<tr>
<td>Comments: This is not directly relevant. The implications are at the policy level with an implementation strategy. (p74 - 82) This question is not relevant to this topic</td>
<td>1</td>
</tr>
<tr>
<td>12. There is an explicit link between the recommendations and the supporting evidence.</td>
<td>2</td>
</tr>
<tr>
<td>Comments: It is clear in reading the report, but is not conducted in the direct and rigorous methods expected in a NICE guideline</td>
<td>2</td>
</tr>
<tr>
<td>13. The guideline has been externally reviewed by experts prior to its publication.</td>
<td>1</td>
</tr>
<tr>
<td>Comments: This report does not mention being reviewed by others external to the process. The steering group may have acted as such to the advisory group but membership overlapped. An advisory group was convened, but it contained members of the steering committee.</td>
<td>1</td>
</tr>
<tr>
<td>14. A procedure for updating the guideline is provided.</td>
<td>1</td>
</tr>
<tr>
<td>Comments: No procedure to update is mentioned, however this may not be appropriate. There is an implementation project. This question is not appropriate to the report, which stresses the need for more awareness and research in this area.</td>
<td>1</td>
</tr>
</tbody>
</table>

### Clarity and presentation (domain 4)

| 15. The recommendations are specific and unambiguous. | 4 |
| Comments: They are clear but general. | 3 |
| 16. The different options for management of the condition are clearly presented. | 1 |
| Comments: I am unsure about the relevance of this question to this report. This is not relevant to the topic being considered. | 1 |
| 17. Key recommendations are easily identifiable. | 4 |
| Comments: The key recommendations in the guideline are easily identifiable and include implementation. They are clearly laid out at the beginning of the report. | 4 |
| 18. The guideline is supported with tools for application. | 4 |
Comments: Implementation of recommendations given (p10-11, 77-82)

Applicability (domain 5)

19. The potential organisational barriers in applying the recommendations have been discussed.
   Comments: Organisational changes that are required to implement the guideline recommendations are discussed (p68 - 72).

20. The potential cost implications of applying the recommendations have been considered.
   Comments: There is no discussion or evidence review for the cost implications of the recommendations.

21. The guidelines presents key review criteria for monitoring and/or audit purposes.
   Comments: Not given in report. Additional information suggests the subsequent implementation project will monitor. This is not done, but would have been useful.

Editorial independence (domain 6)

22. The guideline is editorially independent from the funding body.
   Comments: The authors and editor are stated on p7, however not where they are from. The funder is understood to be the Sainsbury Centre, which is represented on the steering and advisory groups.

23. Conflicts of interest of guideline development members have been recorded.
   Comments: There is no information concerning how conflicts of interest were either resolved or recorded.

Overall assessment

<table>
<thead>
<tr>
<th>Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly recommend</td>
</tr>
<tr>
<td>recommend</td>
</tr>
</tbody>
</table>

Would you recommend these guidelines for use in practice?

Comments: This report did not set out to be a guideline and therefore does not adopt the rigorous approach expected. However it is providing guidance targeted at a strategic and national level and intends to implement the strategy via the recommendations proposed. It is highly relevant to the current guideline and therefore the needs to be noted.

Note: 4 = strongly agree, 1 = strongly disagree.

| Reviewer 1 | 10 | 12 | 17 | 13 | 6 | 3 |
| Reviewer 2 | 10 | 12 | 11 | 12 | 6 | 2 |
| Total | 20 | 24 | 18 | 25 | 12 | 5 |
Appendix 5: Service user participant information guide

Focus groups on the management of violence/disturbed behaviour in psychiatric in-patient settings

BACKGROUND

The National Institute of Clinical Excellence (NICE) has commissioned the National Collaborating Centre for Nursing and Supportive Care (NCC-NSC) to develop a national guideline that will advise everyone involved in psychiatric in-patient settings about how violence and disturbed behaviour ought to be managed. We are currently in the process of doing this. In order to ensure that all the relevant views are included, amongst other things we are holding a series of focus groups to make sure that the voices from the African-Caribbean community are heard. You are being invited to participate in one of these groups. The group will have between eight and 12 members.

AIM OF THE FOCUS GROUPS

The focus group will discuss the following issues that are being covered by the guideline:

The ward environment - What are your views on the environment within psychiatric in-patient departments? What relationship do you think there is between violence and the ward environment?

Predicting violence - What are your experiences of health care professionals predicting that you or others you know are likely to be violent?

Interventions that are used to manage violent or potentially violent behaviour:

De-escalation techniques
Observation techniques
Restraint
Seclusion
Rapid tranquillisation

- What do you think about these interventions, and have you any experience of them? Why do you think this happened to you?

Accident and Emergency departments - Do you have any experience of any of the interventions in an emergency department?

Training - Do you have any views about training in the interventions used to manage violence in psychiatric in-patient departments?

The staff-service user relationship - What are your views and experiences of service users' relationships with staff?

We would like to know about your experiences, or about experiences of others that you know. Although there may be other issues that are important to psychiatric care, we will only be able to use information which is related to the topics above.

HOW WILL THE FOCUS GROUP BE RUN

Joan Field Thorne will be facilitating the group. She will be responsible for leading you through all the topics and asking you to give more information about a particular point and also asking if other people have had similar experiences.
Two other people will also be attending the meeting. Jane Cowl from the patient involvement unit, who is responsible for making sure that service users' views are included in NICE guidelines and Louise Nelstrop, who is the project manager, responsible for co-ordinating the guideline and making sure all the relevant evidence is considered.

**WHAT WILL HAPPEN TO THE INFORMATION THAT YOU GIVE?**

As long as everyone in the group is given permission, the discussion will be taped. The discussion will then be analysed and written up into a report. You will receive a copy of this report, and will be able to suggest changes, if you feel that certain points have been missed or over-emphasised. Once everyone is happy, this information will be passed to the group of people who are responsible for making the recommendations. This group is made up of service users and health care professionals, both of whom have an equal say in the recommendations that the guideline will make.

**WILL ANYONE BE ABLE TO IDENTIFY YOU PERSONALLY?**

No. All the information that you give will be confidential. You will be asked to sign a form stating that you are willing to participate in the group, but no one will be able to identify what you said and you will not be named anywhere in the guideline. You can decide that you want to withdraw the information that you gave at any time.

**WILL YOU BE PAID?**

You will be paid £35 for taking part in this focus group. You will also be reimbursed for your travel costs and provided with lunch and refreshments.

**THANK-YOU FOR TAKING THE TIME TO READ THIS LEAFLET. IF YOU REQUIRE ANY FURTHER INFORMATION ABOUT THE FOCUS GROUP PLEASE CONTACT:**

Joan Field Thorn  
Black Orchid  
189c Newfoundland Rd  
St Agnes  
Bristol, BS2 9NY  
Tel: 0117 9079982

**IF YOU WANT TO KNOW MORE ABOUT THE GUIDELINE OR ABOUT NICE OR THE NCC-NSC PLEASE CONTACT:**

Louise Nelstrop  
RCNI  
Radcliffe Infirmary  
Woodstock Rd Oxford, OX2 6HE  
Tel 01865 224590  
E-mail louise.nelstrop@rcn.org.uk
Appendix 6: Health care professional participant information guide

Focus groups on the management of violence/disturbed behaviour in psychiatric in-patient settings: health care professional views?

BACKGROUND
The National Collaborating Centre for Nursing and Supportive Care (NCC-NSC) is developing a national guideline for the National Institute of Clinical Excellence (NICE) to advise health care professionals about the management of violence and disturbed behaviour in psychiatric in-patient settings. In order to ensure that all the relevant views are included, amongst other things we are holding a series of focus group discussions to make sure that the voices from the African-Caribbean community are heard. Two groups are being set up with service users and one with health care professionals. You are being invited to participate in the health care professional group. The group will have between eight and 12 members.

AIM OF THE FOCUS GROUP DISCUSSION

The focus group will discuss the following issues that are being covered by the guideline:

Predicting violence - What are your experiences of predicting violence and of other health care professionals predicting violence, especially with regard to the Afro-Caribbean service users?

Interventions that are used to manage violent or potentially violent behaviour:

- De-escalation techniques
- Observation techniques
- Restraint
- Seclusion
- Rapid tranquillisation

- What do you think about these interventions, and do you have any experience of using them? Do you feel that they are used disproportionately with Afro-Caribbean service users?

Accident and Emergency departments - Do you have any experience of any of these interventions in an emergency department?

Training - Do you have any views about training in the interventions used to manage violence in psychiatric in-patient departments?

The staff-service user relationship - What are your views and experiences of staff relationships with service users, particularly Afro-Caribbean service users?
We would like to know about your experiences, or about the experiences of others that you know. Although there may be other issues that are important to psychiatric care, we will only be able to use information which is related to the topics above.

**HOW WILL THE FOCUS GROUP BE RUN**

Jane Cowl, from the Patient Involvement Unit (PIU) will be facilitating the group. Jane will be responsible for leading you through all the topics and asking you to give more information about a particular point and also asking if other people have had similar experiences.

One other people will also be attending the meeting, Jackie Chandler Oatts, who assists the project manager, Louise Nelstrop in co-ordinating the guideline and making sure all the relevant evidence is considered.

**WHAT WILL HAPPEN TO THE INFORMATION THAT YOU GIVE?**

As long as everyone in the group gives their permission, the discussion will be taped. This will help the researchers analyse the discussion afterwards and write a report. You will receive a copy of this report, and will be able to suggest changes if you feel that certain points have been missed or over-emphasised. Once everyone is happy, this information will be passed to the Guideline Development Group, who are responsible for making recommendations. This group is made up of service users and health care professionals, both of whom have an equal say in the recommendations that the national guideline will make.

**WILL ANYONE BE ABLE TO IDENTIFY YOU PERSONALLY?**

No. All the information that you give will be confidential. You will be asked to sign a form stating that you are willing to participate in the group, but no one will be able to identify what you said and you will not be named anywhere in the guideline. You can decide that you want to withdraw the information that you gave at any time.

**THANK-YOU FOR TAKING THE TIME TO READ THIS LEAFLET.**

**IF YOU REQUIRE ANY FURTHER INFORMATION ABOUT THE FOCUS GROUP OR IF YOU WANT TO KNOW MORE ABOUT THE GUIDELINE OR ABOUT THE ORGANISATIONS INVOLVED PLEASE CONTACT:**

Jackie Chandler Oatts  
NCC-NSC  
Royal College of Nursing Institute  
Radcliffe Infirmary  
Woodstock Rd Oxford, OX2 6HE  
Tel 01865 224590  
E-mail louise.nelstrop@rcn.org.uk
Appendix 7: Service user focus group discussion guide

**Topic guide**

**The ward environment**
- What relationship do you think there is between violence and the ward environment? (Things that are good about the ward environment, things that need to be changed).
- Types of setting - are things different in different settings?

**Predicting violence**
- What are your experiences of health care professionals predicting that you or others you know are likely to be violent?
- Have you been involved in talking about your history of illness? etc.

(20 mins)

**Interventions** that are used to manage violent or potentially violent behaviour:

**De-escalation techniques** (Techniques used to calm potentially aggressive situations: talking to someone, mirroring their mood etc.)
- Do you think that de-escalation techniques are a good thing?
- Have you noticed nursing staff using them?
- Are they used enough? Too much?
- What are your feelings about these techniques?

**Observation techniques** (To be closely watched by nursing staff to prevent aggressive behaviour to others. The watching is either constant or at very regular intervals)
- Do you have personal experience of being observed?
- Do you think that observation techniques are a good thing?
- Is it used enough? Too much?
- What are your feelings about this practice?

**Restraint** (To be physically held to prevent harm to self or others)
- Do you have any experience of being restrained?
- Do you know of others who have been restrained?
- Is it used enough, too much?
- What are your feelings about his practice?

**Seclusion** (To be put in isolation and segregated from others)
- Do you have any experience of being secluded?
- Do you know of others who have been secluded?
- Is it used enough, too much?
- What are your feelings about his practice?

**Rapid tranquillisation** (To receive medication usually by injection for immediate calming effect)
- Do you have any experience of rapid tranquillisation?
• Do you know of others who have received rapid tranquillisation?
• Is it used enough? Too much?
• What are your feelings about this practice?

(40 mins)

The staff-service user relationship
• What are your views on the relationship between staff and service users in the in-patient settings where you have been?
• Have you been involved in making advance directives - planning how you would like to be treated in the event that you become violent during you stay?

Training
• Do you have any views about training in the interventions used to manage violence in psychiatric in-patient departments?

Accident and Emergency departments
• Do you have any experience of any of the interventions in an emergency department?
• Do you think that there should be a different approach in A&E compared to in-patient settings?

(30 mins)

Time for debriefing
Evaluation forms
(15 mins)
Appendix 8: Health care professional focus group discussion guide

Focus groups on the management of violence/disturbed behaviour in psychiatric in-patient settings: health care professional views

**Topic guide and timetable**

(Approximate timings for guidance)

1. Coffee and welcome
2. Introduction
2.0 Focus group

**Ward environment**

The relationship of ward environment to violent behaviour
The effect of different settings - for example, secure facilities

1. **Predicting violence**
   - How successful is prediction of violence?
   - Is ethnicity an issue in prediction?

1. **Intervention techniques**
   - De-escalation
   - Observation
   - Restraint
   - Seclusion
   - Rapid tranquillisation
   - What is your experience of these techniques, their use and effectiveness, especially when involving African-Caribbean patients?

1.0 **The staff-service user relationship**
   - What are your views and experiences of staff relationships with service users, particularly African-Caribbean service users?

**Training**

Do you have any views on training for staff to manage violence, also on dealing with the needs of an ethnically mixed ward community, and particularly African-Caribbean service users?

1. **Accident and Emergency departments**
   - Do you have any A&E experience with psychiatric patients and what are your views on how they are dealt with in A&E?

1. What are the key messages for the guideline? Any other comments?
2.0 Close and buffet lunch

The session will be taped and notes will be taken.
There will be a five-minute break at a suitable point for toilet etc.

Thank you.
Appendix 9: Written consent form

CONSENT FORM

Title of project:

Name of researcher:

Please initial box

1. I confirm that I have read and understand the information sheet dated …… (version…) for the above study and have had the opportunity to ask questions.

2. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason, without my medical care or legal rights being affected.

3. I agree to take part in the above study.

______________________   __________ ___________ _______ _________
Name      Signature   Date

_____________________   __________ ___________ _______ _________
Researcher   Signature   Date

1 copy for participant   1 copy for researcher
### Appendix 15:

#### Peer reviewers

Comments on the guideline were received from the following expert reviewers:

<table>
<thead>
<tr>
<th>Name</th>
<th>Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr Ann Alty</td>
<td>Morecombe Bay Primary Care Trust</td>
</tr>
<tr>
<td>Dr Joanna Bennett</td>
<td>The Sainsbury Centre for Mental Health</td>
</tr>
<tr>
<td>Prof. Len Bowers</td>
<td>St Bartholomew School of Nursing and Midwifery, City University</td>
</tr>
<tr>
<td>Dr Aggrey Burke</td>
<td>South West London and St. Georges Mental Health Trust</td>
</tr>
<tr>
<td>Gill Chalder</td>
<td>South Staffordshire Healthcare NHS Trust</td>
</tr>
<tr>
<td>Dr Joseph Cortis</td>
<td>School of Health Studies, Leeds.</td>
</tr>
<tr>
<td>Dr Suman Fernando</td>
<td>Liaison Psychiatry, University of West England</td>
</tr>
<tr>
<td>Cathereine Fewster</td>
<td>Lancashire NHS Trust</td>
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<tr>
<td>Anthony Harrison</td>
<td>Liaison Psychiatry, University of West England</td>
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<tr>
<td>Dr Patrick O'Brien</td>
<td>University of Birmingham</td>
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<td>Brodie Paterson</td>
<td>University of Stirling</td>
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<tr>
<td>Carol Paton</td>
<td>Oxleas NHS Trust</td>
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<tr>
<td>Mark Ridge</td>
<td>Derbyshire Mental Health (NHS) Trust</td>
</tr>
<tr>
<td>Dr David Taylor</td>
<td>Maudsley Hospital</td>
</tr>
<tr>
<td>Mark West</td>
<td>Birmingham and Solihull Mental Health NHS Trust</td>
</tr>
</tbody>
</table>
Appendix 16:

Guideline review panel

Mrs Judy Mead (Chair)  Head of Clinical Effectiveness, Chartered Society of Physiotherapy

Mrs Joyce Cormie  Consumer Representative

Mrs Gill Hek  Reader in Nursing, University of the West of England, Bristol

Ms Karen Cowley  Practice Development Nurse, York Health Service NHS Trust

Mrs Jill Freer  Head of Clinical Governance and Quality Development, Leicestershire, Northamptonshire and Rutland Strategic Health Authority

Miss Amanda Wilde  Reimbursement and Outcomes Manager, ConvaTec Ltd