Bedside handover: Evidence of quality improvement in nursing care and documentation.

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Acknowledgements

- Data collection
  - Verity Maybin
- Project Management
  - Nurses
  - Project Leads – Caroline Barker, Leanne Rhodes, Karen Burdett
  - Nurse Unit Managers – Jenni Tenne, Carla McCarthy, Justine Mizen
- Victoria University Internal Grant
Background

- Traditionally, nurses conduct handover in a ‘Group’ format, often in a room away from the clinical area.
- Recently, Bedside Handover (BHO) has been shown to:
  - Promote patient-focused care (Chaboyer et al 2010 Int J Nurs Prac)
  - Improve accuracy (Chaboyer et al 2010 Int J Nurs Prac)
  - Enhance service delivery (Chaboyer et al 2010 Int J Nurs Prac)
  - Increase staff & patient satisfaction (Anderson & Mangino 2006 Nurs Adm Q)
- Significance:
  - Quantitative, empirical evidence is lacking that implementation of modified handover processes can improve standards of nursing or midwifery care.
Background

- Western Health survey (2010) regarding handover practice
  - Time consuming
  - Varied in style
  - Lacks patient involvement &
  - May negatively impact on standards of nursing care & documentation

- Reluctance expressed by nurses to change handover style, in particular, handover at the bedside

Hypothesis

- Modification of handover practice would be challenging in view of this reluctance

Evidence needed to demonstrate:

- Acceptability of bedside handover by patients and nurses
- Improvement in standards of care after introduction of bedside handover
Table 1: Preferences for handover style

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preference for how information is transferred during afternoon handover</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Verbal and written</td>
<td>104</td>
<td>68.0</td>
</tr>
<tr>
<td>Verbal</td>
<td>46</td>
<td>30.1</td>
</tr>
<tr>
<td>Taped</td>
<td>2</td>
<td>1.3</td>
</tr>
<tr>
<td>Written</td>
<td>1</td>
<td>.6</td>
</tr>
<tr>
<td>Preference for who provides afternoon handover</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nurse in charge</td>
<td>63</td>
<td>41.2</td>
</tr>
<tr>
<td>Nurse caring for the patient</td>
<td>58</td>
<td>37.9</td>
</tr>
<tr>
<td>Both</td>
<td>32</td>
<td>20.9</td>
</tr>
<tr>
<td>Preference for where handover is conducted</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Staff Room</td>
<td>103</td>
<td>67.3</td>
</tr>
<tr>
<td>Staff Room and Nurses Station</td>
<td>23</td>
<td>15.0</td>
</tr>
<tr>
<td>Bedside</td>
<td>17</td>
<td>11.1</td>
</tr>
<tr>
<td>Nurses Station</td>
<td>10</td>
<td>6.5</td>
</tr>
<tr>
<td>Would you like the style of handover to change</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No change</td>
<td>125</td>
<td>81.7</td>
</tr>
<tr>
<td>Group</td>
<td>13</td>
<td>8.5</td>
</tr>
<tr>
<td>Group and individual</td>
<td>5</td>
<td>3.3</td>
</tr>
<tr>
<td>Bedside</td>
<td>4</td>
<td>2.6</td>
</tr>
<tr>
<td>Not specific</td>
<td>4</td>
<td>2.6</td>
</tr>
<tr>
<td>Individual</td>
<td>2</td>
<td>1.3</td>
</tr>
</tbody>
</table>
Intervention

- Informed by the ‘OSSIE Guide to Clinical Handover Improvement’ (Australian Commission on Safety and Quality in Healthcare)
- Bedside Handover introduced in 3 acute clinical wards
- August 2010
- 5-step approach
  1) Stakeholder engagement,
  2) Simple solution development,
  3) Organisational leadership,
  4) Implementation, and
  5) Evaluation.
Aim

- To examine the impact of bedside handover upon the quality of nursing care and documentation as well as the length of handover duration.
Sample & Recruitment

- **Design:**
  - Observational, longitudinal pre- and post-intervention study

- **Setting:**
  - 3 wards (medical, surgical, maternity) of Western Health

- **Consecutive Sample:**
  - 15 days per ward in total

- **Data collected for all patients on each ward, 12pm each day**
  - Pre- (April 2010) (5 days)
  - Post-intervention (3-Month, December 2010) (5 days)
  - Post-intervention (12-Month, August 2011) (5 days)

- **Ethical approval from WHLREP**
  - Quality Improvement Activity
Setting

- Western Health – Western Suburbs, Melbourne, Victoria
- Acute Tertiary Adult and Paediatric Healthcare Organisation
- 3 Acute Hospital Campuses, 2 Aged Care Centres
- 23 Wards - Medical, Surgical, Paediatric, Maternity, Aged Services
Design & Method

- **Data Collection**
  - Individual medical record review & direct observation
  - Trained Research Assistant collected & recorded information on an explicit data-form
  - 11 items
    - Direct Observation - handover duration for 5 shifts
    - Medical Record Review
      - 3 items relating to nursing care
      - 7 items relating to nursing documentation

- **Analysis (using SPSS)**
  - Descriptive statistics
  - Chi-square analysis - nursing items
  - Mann-Whitney U-Test - handover duration
Information Collected

- 3 items relating to nursing care activities
  - Application of allergy alert band
  - Medications administered as prescribed
  - ID labels on each side of the drug chart

- 7 items relating to completion of nursing documentation
  - Admission form
  - Braden tool (pressure ulcer (PU) risk assessment) on admission
  - Braden tool 2 days after admission
  - Braden tool one week after admission
  - Preventative measures for PU implemented on admission
  - Preventative measures for PU implemented 2 days after admission
  - IV Cannula assessment
## Findings

### Comparison of handover duration in the Pre, 3-Month & 12-Month periods

<table>
<thead>
<tr>
<th>Variable</th>
<th>Pre</th>
<th>3 Months</th>
<th>12 Months</th>
<th>p Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duration of handover (mins)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acute Medical Ward</td>
<td>Median</td>
<td>49.0</td>
<td>40.0</td>
<td>37.0</td>
</tr>
<tr>
<td></td>
<td>Range</td>
<td>47 to 52</td>
<td>37 to 44</td>
<td>32 to 40</td>
</tr>
<tr>
<td>Acute Surgical Ward</td>
<td>Median</td>
<td>22.0</td>
<td>26.5</td>
<td>25.0</td>
</tr>
<tr>
<td></td>
<td>Range</td>
<td>20 to 24</td>
<td>22 to 35</td>
<td>23 to 29</td>
</tr>
<tr>
<td>Maternity Ward</td>
<td>Median</td>
<td>33</td>
<td>27.0</td>
<td>29.0</td>
</tr>
<tr>
<td></td>
<td>Range</td>
<td>22 to 40</td>
<td>23 to 33</td>
<td>28 to 32</td>
</tr>
</tbody>
</table>

†: Comparison of handover times for Pre and 3-Month Periods by Mann-Whitney U-Test (2-tailed)
‡: Comparison of handover times for 3-Month and 12-Month Periods by Mann-Whitney U-Test (2-tailed)
# Findings

## Comparison of nursing care elements

A total of 1121 medical records were examined:
- 381: pre intervention period
- 367: 3-Month period
- 373: 12-Month period

<table>
<thead>
<tr>
<th>Variable</th>
<th>Pre</th>
<th>3-Month</th>
<th>12-Month</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>Allergy alert band</td>
<td>80/96#</td>
<td>83.3</td>
<td>94/96</td>
<td>97.9</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medications administered as prescribed</td>
<td>308/380*</td>
<td>81.1</td>
<td>348/366</td>
<td>95.1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ID labels on each side of the drug chart</td>
<td>300/381</td>
<td>78.7</td>
<td>362/366</td>
<td>98.9</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

# Data was collected only from patients with a known allergy.

* Data may not have been available for all patients. E.g. several patients did not have a medication chart.

† Comparison of data related to nursing care for Pre and 3-Month Periods by Chi-Square Analysis.

‡ Comparison of data related to nursing care for 3-Month and 12-Month Periods by Chi-Square Analysis.
## Findings

### Comparison of nursing care documentation

<table>
<thead>
<tr>
<th>Variable</th>
<th>Pre</th>
<th>3-Month</th>
<th>12-Month</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>Admission form</td>
<td>154/197</td>
<td>78.2</td>
<td>150/157</td>
<td>95.5</td>
</tr>
<tr>
<td>Braden tool on admission</td>
<td>89/121</td>
<td>73.6</td>
<td>75/91</td>
<td>82.4</td>
</tr>
<tr>
<td>Braden tool 2 days after admission</td>
<td>56/80</td>
<td>70.0</td>
<td>54/60</td>
<td>90.0</td>
</tr>
<tr>
<td>Braden tool one week after admission</td>
<td>17/33</td>
<td>51.5</td>
<td>21/23</td>
<td>91.3</td>
</tr>
</tbody>
</table>

* Data may not have been available for all patients e.g. Braden tool and admission form not used in the maternity ward.

† Comparison of data related to nursing documentation for Pre and 3-Month Periods by Chi-Square Analysis.

‡ Comparison of data related to nursing documentation for 3-Month and 12-Month Periods by Chi-Square Analysis.
Findings

Comparison of nursing care documentation

<table>
<thead>
<tr>
<th>Variable</th>
<th>Pre</th>
<th>3-Month</th>
<th>12-Month</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>Preventative measures for PU on admission</td>
<td>73/108</td>
<td>67.6</td>
<td>72/89</td>
<td>80.9</td>
</tr>
<tr>
<td>Preventative measures for PU 2 days after admission</td>
<td>46/76</td>
<td>60.5</td>
<td>52/57</td>
<td>91.2</td>
</tr>
<tr>
<td>IV Cannula</td>
<td>48/103</td>
<td>46.6</td>
<td>64/101</td>
<td>63.4</td>
</tr>
</tbody>
</table>

* Data may not have been available for all patients e.g. Braden tool not used in the maternity ward.
† Comparison of data related to nursing documentation for Pre and 3-Month Periods by Chi-Square Analysis.
‡ Comparison of data related to nursing documentation for 3-Month and 12-Month Periods by Chi-Square Analysis.
Conclusion

- Sustained improvements in nursing care observed:
  - Allergy alert band, Medication as prescribed, ID labels
- Sustained improvements in nursing documentation observed:
  - Admission Form, IV cannula assessment
  - Pressure ulcer risk assessment on admission & after 2 days
- For one ward, sustained reduction in handover duration
- Organisational Impact
  - 12 months later, uptake of BHO at WH has increased from 1 (4%) to 16 (70%) wards
  - Online Learning Resource
Limitations

- Non-blinded study
  - Possible Hawthorne Effect
- Inter-rater reliability of data
  - Replication of data for 110 cases (~10%)
  - High agreement for 3 items assessed
    - Braden risk assessment on admission (kappa = 0.96)
    - Meds administered as prescribed (kappa = 0.91)
    - ID labels on med chart (kappa = 1.00)
Future Direction

- Findings support nurse & midwifery opinions that standards of care & documentation have improved as a result of the implementation of BHO
- Pending analysis:
  - Patient opinions about BHO (2012)
- Further exploration of the effect of BHO practice in alternative settings
  - Move to the Cube – ED Handover Project
  - Currently in progress
- Dissemination:
  - Manuscript in peer review
The End