A quantitative assessment of patient and nurse outcomes of bedside nursing report implementation

Kari Sand-Jecklin and Jay Sherman

Aims and objectives. To quantify quantitative outcomes of a practice change to a blended form of bedside nursing report.

Background. The literature identifies several benefits of bedside nursing shift report. However, published studies have not adequately quantified outcomes related to this process change, having either small or unreported sample sizes or not testing for statistical significance.

Design. Quasi-experimental pre- and postimplementation design.

Methods. Seven medical-surgical units in a large university hospital implemented a blend of recorded and bedside nursing report. Outcomes monitored included patient and nursing satisfaction, patient falls, nursing overtime and medication errors.

Results. We found statistically significant improvements postimplementation in four patient survey items specifically impacted by the change to bedside report. Nursing perceptions of report were significantly improved in the areas of patient safety and involvement in care and nurse accountability postimplementation. However, there was a decline in nurse perception that report took a reasonable amount of time after bedside report implementation; contrary to these perceptions, there was no significant increase in nurse overtime. Patient falls at shift change decreased substantially after the implementation of bedside report. An intervening variable during the study period invalidated the comparison of medication errors pre- and postintervention. There was some indication from both patients and nurses that bedside report was not always consistently implemented.

Conclusions. Several positive outcomes were documented in relation to the implementation of a blended bedside shift report, with few drawbacks. Nurse attitudes about report at the final data collection were more positive than at the initial postimplementation data collection.

Relevance to clinical practice. If properly implemented, nursing bedside report can result in improved patient and nursing satisfaction and patient safety outcomes. However, managers should involve staff nurses in the implementation process and continue to monitor consistency in report format as well as satisfaction with the process.

Key words: bedside shift report, nursing handover, nursing shift report, patient-centred care, patient satisfaction

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What does this paper contribute to the wider global clinical community?

• Previous nursing bedside report manuscripts have had very small or unreported sample sizes for patient and nursing bedside report surveys and have rarely attempted to calculate the statistical significance of their results.

• Our patient and nurse survey instruments examined a far greater number of factors/issues that are considered relevant to bedside nursing report than any other study of which we are currently aware.

• We are also only the second published study to track changes in patient falls during the handover hour before and after implementing bedside report.
Introduction

Improving upon the effectiveness of communication is a Joint Commission National Patient Safety Goal (JCAHO 2013). According to the Joint Commission (2011), one of the factors leading to sentinel patient events is miscommunication. A significant percentage of a nurse’s communications each day occurs during patient handoffs, and the safety of the patient can be compromised at this time (Friesen et al. 2008). A survey of over half a million hospital staff found that respondents rated the safety of patient handoffs second lowest among 12 areas of patient safety (Sorra et al. 2012). In a study concerning near miss incidents, nurses again identified patient handoffs as a factor (Ebright et al. 2004). In recent years, bedside nursing handoffs have been presented positively in the literature, with benefits such as improved patient satisfaction, improved nurse communication and shorter shift reports being identified. It was the goal of the Medical Surgical Research Utilization Team at West Virginia University to implement a change in practice to a blended form of bedside nurse shift handoff, and to evaluate this new format in terms of patient and nurse satisfaction as well as impact on patient safety.

Background

The literature on nursing bedside report is focused in two general areas. The first focus area is the process of implementing bedside report, either describing the experiences related to implementation or explaining how other organisations could implement this change. The second area of focus is improving the process of bedside report, often through observation and identifying common themes, or by describing how others may improve their own reporting process. Unfortunately, although there is strong consistency in the suggested strategies for the implementation of bedside report, there is a gap in the literature in terms of documenting quantitative patient and nurse outcomes (Riesenberg et al. 2010, Novak & Fairchild 2012, Staggers & Blaz 2012, Sherman et al. 2013). However, in the last two years, several manuscripts have been published that in some way quantified the potential outcomes of bedside nursing report.

Identified benefits of bedside report

Numerous benefits of bedside nursing report have been reported, with remarkably few drawbacks identified. The most often reported benefit (identified by nine individual manuscripts) is that patients are better informed (Searson 2000, Anderson & Mangino 2006, Laws & Amato 2010, Tidwell et al. 2011, Maxson et al. 2012, Rush 2012, Thomas & Donohue-Porter 2012, Wakefield et al. 2012, Sand-Jecklin & Sherman 2013). However, several of these manuscripts did not report sample size or statistical significance (Anderson & Mangino 2006, Laws & Amato 2010, Thomas & Donohue-Porter 2012, Rush 2012, Wakefield et al. 2012), and others (Searson 2000, Maxson et al. 2012) were based on small sample sizes. The study reported by Sand-Jecklin and Sherman (2013) did find significant improvements in patient information as a result of bedside report using a large sample size of 302 patients/families preimplementation and 250 postimplementation.

The second most often reported benefit of moving nursing report to the bedside is related to general improvements in patient satisfaction. Improvements in patient satisfaction are a primary goal of nursing practice changes. Radtke (2013) and Reinbeck and Fitzsimons (2013) reported improvements in patient responses to the Hospital Consumer Assessment of Healthcare Providers and Systems survey (HCAHPS). However, such general changes in patient satisfaction could be affected by many uncontrolled variables in addition to the implementation of bedside report. Additional studies have found improvements in general patient satisfaction with the practice change, but did not report sample sizes (Willis 2010, Thomas & Donohue-Porter 2012, Cairns & Dudjak 2013), or presented only qualitative impressions (Trossman 2009).

Increased patient involvement in their care is another reported benefit of bedside shift report. Sand-Jecklin and Sherman (2013) found a significant improvement in nurse perceptions of patient involvement in care based on comparisons of 148 nurses at baseline and 98 nurses after the implementation of bedside nursing shift report. Other studies reporting this outcome either did not report sample size or had very small sample sizes or data that did not lend itself to quantitative analysis (Searson 2000, Kelly 2005, Anderson & Mangino 2006, Cairns & Dudjak’s 2013).

Several positive nurse-related outcomes have also been associated with bedside shift report. Improved nurse teamwork is one of these reported outcomes. Unfortunately, the studies reporting this did not report sample size or significance (Anderson & Mangino 2006, Laws & Amato 2010, Thomas & Donohue-Porter 2012), had a small sample size (Tidwell et al. 2011) or were based on qualitative impressions (Trossman 2009). An increase in nursing accountability as a result of bedside shift report was noted by a number of researchers (Anderson & Mangino 2006, Laws & Amato 2010, Maxson et al. 2012, Thomas & Donohue-Porter 2012, Sand-Jecklin & Sherman 2013),
with Sand-Jecklin and Sherman reporting statistically significant increase in nurse perception of report-promoting accountability. Increased report accuracy was also identified as an outcome (Kelly 2005, Anderson & Mangino 2006, Thomas & Donohue-Porter 2012, Cairns & Dudjak 2013), as was an improvement in patient safety (Cahill 1998, Chaboyer et al. 2009, Trossman 2009, Laws & Amato 2010), although studies reporting these results were based on unreported or very small sample sizes. Additionally, the safety improvements were based on the perceptions of nursing staff, rather than direct patient safety data. However, in a South Australian study on bedside handover outcomes, Bradley and Mott (2012) reported a reduction in patient safety incidents (burns, medication errors, skin tears and falls) after implementing a bedside nursing report.

Additional benefits of bedside nurse report that have been mentioned in the literature include improved nurse–patient relationship (Searson 2000, Anderson & Mangino 2006, Thomas & Donohue-Porter 2012), increased mentoring opportunities (Trossman 2009), increased nurse ability to answer physicians’ questions at the beginning of the shift (Anderson & Mangino 2006, Maxson et al. 2012), general improvement in nurse satisfaction with report (Tidwell et al. 2011, Evans et al. 2012), reduction in patient discharge times due to improvement in patient education (Chaboyer et al. 2009), better task prioritising at the beginning of shift (Federwisch 2007), a decrease in falls (Athwal et al. 2009), improvements in nurse friendliness and attitude and more prompt response to patient calls (Wakefield et al. 2012), and a decrease in patient call light use (Cairns & Dudjak 2013). It should be noted again that of the above-mentioned manuscripts, only Tidwell et al. (2011) and Maxson et al. (2012) reported statistically significant results, albeit both with small sample sizes and with Tidwell’s study being performed on a paediatric unit and therefore not as generalisable. Additionally, the Athwal et al. study (2009) contained a very small sample size, Evans et al. (2012) did not report the study sample size and Federwisch (2007) had a qualitative study design.

Drawbacks of bedside report

Few negative outcomes have been reported related to the implementation of bedside nurse report. Most studies reporting negative outcomes are either qualitative in nature or are based on unreported or small sample sizes. Privacy has been voiced as a concern by nurses (Anderson & Mangino 2006, Caruso 2007, Laws & Amato 2010) and a very small number of patients (Timonen & Sihvonen 2000). Some patients have found report redundancy tiring (Cahill 1998, Caruso 2007), have disliked the use of medical jargon (Cahill 1998, Searson 2000) or have felt anxious from repeatedly hearing about their condition (Timonen & Sihvonen 2000). Sand-Jecklin and Sherman (2013) reported nurses’ perceptions of reduced report efficiency and effectiveness, and increased stress associated with report after the implementation of a blended format of nursing shift report.

Finally, there is the question of report length. Of the nine manuscripts reporting on this, seven found that bedside report took less time (Anderson & Mangino 2006, Caruso 2007, Athwal et al. 2009, Tidwell et al. 2011, Bradley & Mott 2012, Evans et al. 2012, Cairns & Dudjak 2013). Howell (1994) reported that half of surveyed nurses thought it took longer and half did not. Sand-Jecklin and Sherman reported that although a significant number of nurses perceived that bedside report took more time, actual overtime data indicated there was no significant difference between baseline and postimplementation overtime.

Of the 13 papers that give specifics about the bedside reporting process implemented, nine used some type of ‘blended’ reporting process. Anderson and Mangino (2006), Athwal et al. (2009) and Laws and Amato (2010) combined a written report with the bedside report. Howell (1994), Caruso (2007), Chaboyer et al. (2009) and Reinbeck and Fitzsimons (2013) reported that nurses discussed information they deemed to be sensitive privately, away from the patient bedside. Federwisch (2007) and Trossman (2009) described a group meeting with all of the nurses before the off-going nurse would meet with the oncoming nurse at the bedside. Only, Tidwell et al. (2011), Bradley and Mott (2012), Thomas and Donohue-Porter (2012) and Wakefield et al. (2012) reported that the entire report took place at the bedside.

Bedside nursing report has increased greatly in popularity recently. In fact, in just the last two years, the literature has approximately doubled in size. These studies have been almost universally positive, but unfortunately have suffered from small or even unreported sample sizes. Additionally, only in the last two years have studies begun to calculate the significance of their results. What evidence there is does suggest that a blended report (with part at the bedside) may lead to beneficial results for both patients and nurses, but more evidence is needed.

Methods

Baseline data and instrumentation

After internal review board approval for the study was obtained, we collected baseline data related to nurse percep-
tions about the shift report process and patient perceptions about nursing care. The ‘Patient Views on Nursing Care’ patient survey tool was adapted from the Larrabee ‘Patient Judgments of Nursing Care’ instrument with permission from the author (Larrabee et al. 1995). Instrument revisions were based on the literature that indicated potential changes in patient perceptions with the implementation of bedside report. The patient survey had 17 items dealing with the following nurse behaviours: treating the patient kindly and with respect, listening to the patient, informing the patient about their care, teaching so that the patient understands, and promoting patient safety; whether they felt that report helped identify recent changes in patient status and promote patient safety; whether they felt that report promoted patient involvement in care; the influence of report on nurse mentoring, teamwork and accountability; and perceptions of whether report provided all information needed for patient care (Sand-Jecklin & Sherman 2013).

Item response items were in Likert-type format with five agreement options (strongly agree to strongly disagree). Demographic items asking about nurse age, number of years in nursing, education and typical shift worked were also included in the instrument. Instrument reliability (Cronbach’s α) was 0.90, with interitem correlations ranging from 0.20–0.71.

Fliers announcing the survey were posted on the medical-surgical units of the university hospital, and all nurses working on the units received an email that asked them to complete the survey, by clicking on the included web link. Baseline data for both patients and nurses were collected during the same month.

We also collected baseline data on patient falls during shift change, medication errors and nurse overtime during the same month-long period. Only patient falls occurring during the hours of shift change (7–8 am, 2–3 pm, 7–8 pm, 11 pm–12 midnight) were included in data collection, as falls occurring at other times during the day would not be directly related to the shift report process. Nursing overtime was measured via employee time records. Nine staff nurses per unit were selected for monitoring of work-time records, ensuring a balance of nurses based on nursing experience. Overtime minutes for 10 shifts in the month were calculated.

Implementation of the practice change

Prior to the practice change, nurses at this large mid-Atlantic university hospital listened to a recorded patient report prior to shift change. As discussed in the background section of this paper, the majority of published papers implemented a ‘blended’ recorded and bedside shift report. As this seems to be the format that is the least redundant for the patients and also that allows for private discussion of any issues that may not be appropriate for the patient to hear at that time, we decided to do likewise. In making this move, the focus of the recorded portion of report (using the Situation, Background, Assessment, Recommendation format) was to be on new issues and abnormal patient assessment findings. The bedside component of report was to include request for permission to conduct report at the bedside; introductions; discussion of the plan of care; visualisation of patient incisions, drains and lines; pain assessment; and review of any potential safety issues. We developed an educational video for nurses, including guidelines and examples of bedside shift report, and also distributed printed guidelines for both bedside and recorded report (Sand-Jecklin & Sherman 2013).

After nurse education, bedside nursing report was implemented across the seven medical-surgical units at the facility. During the first days of implementation, clinical preceptors and nurse managers were present to facilitate the change and guide staff nurses in the report process. We distributed
a brief evaluation survey to nurses’ unit mailboxes one month after the practice change occurred, to learn about nurse perceptions of the new blended report format and to identify the need for practice change reinforcement. The survey asked what was going well with the new report process, what was not going well and what suggestions the nurse had for improving the report process.

At three months postpractice change, we obtained patients and nurse satisfaction data following the same process that was used at baseline data collection. One narrative question was added to the Patient Views on Nursing Care survey for postimplementation data collection: ‘Please tell us how you felt about the nurse-to-nurse shift report at your bedside’. Patient fall, medication error and nurse overtime data were also collected.

Based on the initial postimplementation data, several actions were taken to improve the consistency of use of the blended shift report format. An ‘Improving Bedside Report’ tip sheet was distributed by the research team to all medical-surgical nurses, and posters related to making bedside shift report successful were placed on the study units. In addition, managers and clinical preceptors periodically observed nursing staff during both recorded and bedside report, providing immediate one-on-one feedback related to the process. New medical record updates (including a summary screen designed for use in bedside report) and documentation guidelines were introduced relating to patient plan of care, and guidelines for incorporating patient plan of care into bedside report were also distributed. We hoped that these additional interventions would address some of the identified issues with report efficiency and inconsistency.

Final postimplementation data were collected 13 months after the implementation of bedside shift report. The data collection process was identical to that used at baseline and three-month postimplementation data collection periods. Data analysis included ANOVA comparisons of pre- and postimplementation patient and nurse survey responses, with descriptive analysis of medication errors and patient falls. Repeated measure comparisons were made between baseline and the two postimplementation data points for nurse overtime, and descriptive analysis with thematic coding was completed for the patient narrative comments and the narrative nurse survey.

**Results**

**Patient survey data**

The Patient Views on Nursing Care survey was completed by 233 patients at baseline data collection, 157 patients at three-month postimplementation data gathering, and 154 patients at 13-month postimplementation data gathering. Family members completed 70 baseline surveys, 72 (three)-month postimplementation surveys, and 53 (13)-month postimplementation surveys. Satisfaction with nursing care was high both at baseline and before and after the implementation of bedside report, with all item means being at least 4.2 of five points on all three surveys.

Prior to completing ANOVA comparisons between all pre- and postimplementation responses, we filtered out the family survey responses, and family members may not have been present with the patient at the time of nursing shift reports; thus, their responses may not reflect the impact of the change to bedside nursing report. ANOVA revealed significant differences for the items ‘made sure I knew who my nurse was’ and ‘encourage to be involved in care’, with responses at the 13-month postimplementation data collection being significantly more positive than at baseline for both items, using Dunnett T-3 post hoc comparisons. Additionally, we found significant differences in patient responses to the items ‘include in shift report discussion’ and ‘pass along important information from shift to shift’. Post hoc testing did not demonstrate specific differences between the data collection points; however, both postimplementation means were higher than baseline (see Table 1 for analysis results).

Analysis of patient narrative comments on the postimplementation surveys indicated that most comments were globally positive (good care, caring nurses, professional, etc). However, the next most common response on both surveys (representing 10 and 18% of total responses) was that bedside report was not used, was used inconsistently or consisted of only an introduction of the oncoming nurse. The third most common response was that the patient felt informed and had good explanations as a result of bedside report (8% of responses to the three-month postimplementation survey and 10% of responses at 13 months postimplementation). Other patient responses related to bedside report were positive, with only one patient in each survey indicating concerns about privacy during bedside report. See Table 2 for a summary of patient comments.

**Nurse survey data**

The baseline nurse perception survey was completed by 148 nurses, 98 completed the three-month postimplementation survey, and 54 completed the 13-month postimplementation survey. There was nurse representation from each of the seven targeted units, and all work shifts among the survey respondents. The most common age range of respondents was between 23 and 43 years.
Table 1 Patient Views on Nursing Care survey

<table>
<thead>
<tr>
<th>Survey item</th>
<th>Baseline M (SD)</th>
<th>3 Months postimplementation M (SD)</th>
<th>13 Months postimplementation M (SD)</th>
<th>F (df)</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Made sure I knew who my nurse was</td>
<td>4.56 (0.74)</td>
<td>4.71 (0.64)</td>
<td>4.76 (0.54)</td>
<td>4.48 (2, 537)</td>
<td>0.012</td>
</tr>
<tr>
<td>Treat me with respect</td>
<td>4.64 (0.69)</td>
<td>4.76 (0.61)</td>
<td>4.76 (0.57)</td>
<td>2.26</td>
<td>0.11</td>
</tr>
<tr>
<td>Help me feel comfortable</td>
<td>4.60 (0.75)</td>
<td>4.67 (0.71)</td>
<td>4.65 (0.67)</td>
<td>0.55</td>
<td>0.58</td>
</tr>
<tr>
<td>Treat in a polite and friendly way</td>
<td>4.69 (0.68)</td>
<td>4.76 (0.62)</td>
<td>4.73 (0.57)</td>
<td>0.68</td>
<td>0.51</td>
</tr>
<tr>
<td>Listen carefully without interrupting</td>
<td>4.57 (0.79)</td>
<td>4.66 (0.68)</td>
<td>4.68 (0.62)</td>
<td>1.33</td>
<td>0.27</td>
</tr>
<tr>
<td>Tell me what I need to know about tests/procedures</td>
<td>4.39 (0.96)</td>
<td>4.47 (0.85)</td>
<td>4.55 (0.74)</td>
<td>1.56</td>
<td>0.21</td>
</tr>
<tr>
<td>Tell about plans for discharge</td>
<td>4.19 (1.10)</td>
<td>4.35 (1.00)</td>
<td>4.41 (0.90)</td>
<td>1.99</td>
<td>0.14</td>
</tr>
<tr>
<td>Ask if I have questions or concerns</td>
<td>4.49 (0.86)</td>
<td>4.59 (0.79)</td>
<td>4.61 (0.70)</td>
<td>1.36</td>
<td>0.26</td>
</tr>
<tr>
<td>Answer questions and concerns</td>
<td>4.55 (0.83)</td>
<td>4.57 (0.76)</td>
<td>4.62 (0.73)</td>
<td>0.38</td>
<td>0.69</td>
</tr>
<tr>
<td>Encourage me to be involved in care</td>
<td>4.36 (0.93)</td>
<td>4.47 (0.92)</td>
<td>4.59 (0.74)</td>
<td>2.90</td>
<td>0.056</td>
</tr>
<tr>
<td>Work with me to meet my needs</td>
<td>4.46 (0.87)</td>
<td>4.58 (0.76)</td>
<td>4.61 (0.73)</td>
<td>1.89</td>
<td>0.15</td>
</tr>
<tr>
<td>Teach in a way I could understand</td>
<td>4.46 (0.88)</td>
<td>4.54 (0.84)</td>
<td>4.62 (0.71)</td>
<td>1.76</td>
<td>0.17</td>
</tr>
<tr>
<td>Make sure I understand what I need to do about health</td>
<td>4.43 (0.84)</td>
<td>4.50 (0.86)</td>
<td>4.62 (0.71)</td>
<td>2.55</td>
<td>0.08</td>
</tr>
<tr>
<td>Nurses work well together</td>
<td>4.59 (0.72)</td>
<td>4.65 (0.74)</td>
<td>4.71 (0.64)</td>
<td>1.35</td>
<td>0.26</td>
</tr>
<tr>
<td>Communicated important information shift to shift</td>
<td>4.40 (0.92)</td>
<td>4.61 (0.73)</td>
<td>4.60 (0.73)</td>
<td>3.62 (2, 515)</td>
<td>0.027</td>
</tr>
<tr>
<td>Included in shift report discussion</td>
<td>4.00 (1.24)</td>
<td>4.31 (1.10)</td>
<td>4.29 (1.09)</td>
<td>3.18 (2, 448)</td>
<td>0.042</td>
</tr>
<tr>
<td>Keep health information private</td>
<td>4.62 (0.75)</td>
<td>4.70 (0.65)</td>
<td>4.74 (0.59)</td>
<td>1.20</td>
<td>0.30</td>
</tr>
</tbody>
</table>

Table 2 Patient narrative responses related to bedside report

<table>
<thead>
<tr>
<th>Survey item</th>
<th>3 Months postimplementation (%)</th>
<th>13 Months postimplementation (%)</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Globally positive comments (nurses nice, caring, professional)</td>
<td>106 (42)</td>
<td>93 (48)</td>
<td></td>
</tr>
<tr>
<td>Bedside report not used, used inconsistently or only for introductions</td>
<td>24 (10)</td>
<td>34 (18)</td>
<td></td>
</tr>
<tr>
<td>Felt informed, good explanations</td>
<td>20 (8)</td>
<td>19 (10)</td>
<td></td>
</tr>
<tr>
<td>Comments about specific nurses, not related to bedside report</td>
<td>9 (4)</td>
<td>15 (8)</td>
<td></td>
</tr>
<tr>
<td>Good or improved communication</td>
<td>9 (4)</td>
<td>6 (3)</td>
<td></td>
</tr>
<tr>
<td>Introduced next shift</td>
<td>7 (3)</td>
<td>10 (5)</td>
<td></td>
</tr>
<tr>
<td>Report works well</td>
<td>6 (2)</td>
<td>8 (4)</td>
<td></td>
</tr>
</tbody>
</table>

was 22–34 years old, while mean years in nursing ranged from 10.2–10.5. The most commonly held current degree was the BSN for all surveys. There were no significant differences in respondent demographics between the baseline and the two postimplementation surveys.

ANOVA indicated a significant difference in nurse responses to several survey questions. For items ‘the current system is an effective means of communication’, ‘the current system is an efficient means of communication’, ‘report is relatively stress-free’, baseline responses were significantly more positive than the three-month postimplementation responses, but not the 13-month postimplementation responses, indicating that nurses’ responses rebounded to baseline data at the last data collection point. Nurse responses to the items ‘the current system helps assure accountability’ and ‘the current system promotes patient involvement in care’ were significantly more positive in both postimplementation surveys in comparison with baseline. Responses to ‘report helps prevent patient safety problems’ were significantly more positive at 13 months postimplementation than both baseline and three months postimplementation. Finally, nurse perceptions that ‘report is done in a reasonable amount of time’ were significantly more positive at baseline than at both postimplementation surveys (see Table 3).

Patient and nurse outcome measures

The number of patient falls during shift change for all units decreased from 20 preimplementation to 13 at three months postimplementation and 4 at 13 months postimplementation. Documented medication errors decreased from 20 preimplementation to 10 at three months postimplementation. However, between the 3- and 13-month postimplementation data collection periods, the hospital implemented a new patient incident reporting system, which required documentation of ‘near-miss’ medication errors, errors in
There is good teamwork between the side report at this large university hospital. Patients perception that bedside report is more time consuming than the previous recorded report format. Several positive outcomes have been documented as a result of implementation of a blended form of recorded and bed-side report. In addition, patient falls at 3 months postimplementation of the new system ensured professional report for mentoring. A system of professional report and discharge, and medication errors were found to be decreased at three months postimplementation of the new reporting system. These findings are important, as patient safety is a critical aspect of quality patient care. Nurses perceived increased nurse accountability, increased patient involvement in care and increased prevention of patient safety problems as a result of implementation of bedside nursing report. These perceptions are also reflected in other publications (Cahill 1998, Anderson & Mangino et al 2006, Chaboyer et al 2009, Trossman 2009, 2009, 2009). Table 3 Nurse perceptions of report format

<table>
<thead>
<tr>
<th>Survey item</th>
<th>Preimplementation</th>
<th>3 Months postimplementation</th>
<th>13 Months postimplementation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report is effective means of communication</td>
<td>4.04 (0.56)</td>
<td>3.81 (0.99)</td>
<td>3.84 (0.93)</td>
</tr>
<tr>
<td>Report is efficient means of communication</td>
<td>3.89 (0.76)</td>
<td>3.32 (1.13)</td>
<td>3.78 (0.83)</td>
</tr>
<tr>
<td>Report helps identify changes in patient condition</td>
<td>3.64 (0.87)</td>
<td>3.78 (0.88)</td>
<td>3.91 (0.65)</td>
</tr>
<tr>
<td>Report helps assure accountability</td>
<td>3.43 (0.98)</td>
<td>3.81 (0.94)</td>
<td>3.85 (0.79)</td>
</tr>
<tr>
<td>System ensures professional report</td>
<td>3.80 (0.77)</td>
<td>3.62 (0.86)</td>
<td>3.87 (0.58)</td>
</tr>
<tr>
<td>Report is relatively stress-free</td>
<td>3.63 (0.85)</td>
<td>3.02 (1.05)</td>
<td>3.48 (0.84)</td>
</tr>
<tr>
<td>Report gives opportunities for mentoring</td>
<td>3.35 (0.88)</td>
<td>3.64 (0.89)</td>
<td>3.80 (0.81)</td>
</tr>
<tr>
<td>Report promotes patient involvement in care</td>
<td>2.64 (0.96)</td>
<td>3.66 (0.92)</td>
<td>3.81 (0.85)</td>
</tr>
<tr>
<td>Report prevents delays in patient care and discharge</td>
<td>3.40 (0.96)</td>
<td>3.10 (1.09)</td>
<td>3.24 (0.80)</td>
</tr>
<tr>
<td>Report helps prevent patient safety problems</td>
<td>3.41 (0.91)</td>
<td>3.60 (0.87)</td>
<td>3.93 (0.61)</td>
</tr>
<tr>
<td>I feel adequately informed after report</td>
<td>3.59 (0.81)</td>
<td>3.46 (0.95)</td>
<td>3.78 (0.69)</td>
</tr>
<tr>
<td>I feel informed about patient plan of care after report</td>
<td>3.54 (0.83)</td>
<td>3.47 (0.86)</td>
<td>3.69 (0.75)</td>
</tr>
<tr>
<td>I feel informed about patient discharge plan after report</td>
<td>3.15 (0.96)</td>
<td>3.12 (1.00)</td>
<td>3.22 (0.92)</td>
</tr>
<tr>
<td>I feel informed about patient teaching needs after report</td>
<td>3.11 (0.99)</td>
<td>3.17 (0.93)</td>
<td>3.33 (0.91)</td>
</tr>
<tr>
<td>Report is completed in a reasonable time</td>
<td>3.69 (0.86)</td>
<td>3.08 (1.16)</td>
<td>3.24 (1.16)</td>
</tr>
<tr>
<td>Nurses on the unit keep patients informed about care</td>
<td>3.80 (0.73)</td>
<td>3.76 (0.66)</td>
<td>3.90 (0.59)</td>
</tr>
<tr>
<td>There is good teamwork between shifts on the unit</td>
<td>3.92 (0.81)</td>
<td>3.79 (0.71)</td>
<td>3.83 (0.95)</td>
</tr>
</tbody>
</table>

Drawing medication peak/trough levels, medications missing from patient drawers and other medication events. Thus, no valid comparison could be made between the three data collection points after the final 13-month postimplementation data collection. Nurse overtime data comparisons indicated no significant change in overtime between baseline and either of the postimplementation data collection periods, either for overtime as a whole or for overtime on individual nursing units. Thus, overtime data do not parallel nurse perceptions that bedside report is more time consuming than the previous recorded report format.

Discussion

Several positive outcomes have been documented as a result of implementation of a blended form of recorded and bedside report at this large university hospital. Patients perceived better nurse-to-nurse communication, more patient involvement in care, more involvement in shift report and staff making sure the patient knew who his/her nurse was. The changes in patient perceptions on the items reflecting these issues together with the lack of change of response to the more broad or general survey items would seem to indicate the direct influence of bedside report on patient perceptions. These findings reflect the reports of the previous studies (Searson 2000, Kelly 2005, Anderson & Mangino 2006, Cairns & Dudjak 2013). In addition, patient falls at shift change were reduced after the implementation of bedside report, and medication errors were found to be decreased at three months postimplementation of the new reporting system. These findings are important, as patient safety is a critical aspect of quality patient care.

Nurses perceived increased nurse accountability, increased patient involvement in care and increased prevention of patient safety problems as a result of implementation of bedside nursing report. These perceptions are also reflected in other publications (Cahill 1998, Anderson & Mangino et al 2006, Chaboyer et al 2009, Trossman 2009, 2009).
The rebounding of nurses’ perceptions about the effectiveness, efficiency and stressfulness of report to approximately baseline levels at the 13-month postimplementation data collection point would seem to indicate that it may take longer than three months for nurses to become comfortable with the practice of bedside report. To our knowledge, no other studies have monitored outcomes from a change to bedside nurse report for an extended period of time. Thus, these findings are significant in terms of providing quantitative support for continued monitoring of the implementation and outcomes of bedside report for at least a year postimplementation.

On the less positive side, nurses had a lower level of agreement with the statement that shift report was completed in a reasonable amount of time at both postimplementation data collection points. In contrast to this perception, data on nurse overtime demonstrated no significant difference between baseline and either of the postimplementation data collection points. Potential explanations for these conflicting findings may be that nurses developed efficiencies in areas other than bedside report, in order to be able to leave work on time, or that the inconsistencies in implementation of bedside report contributed to the perception that it took longer than a reasonable amount of time. The majority of other studies monitoring report time indicated that bedside report took a shorter amount of time than prior forms of report, (Howell 1994, Anderson & Mangino 2006, Caruso 2007, Athwal et al. 2009, Tidwell et al. 2011, Bradley & Mott 2012, Evans et al. 2009, Tidwell et al. 2011, Thomas & Donohue-Porter 2012). The rebounding of nurses’ perceptions about the effectiveness, efficiency and stressfulness of report to approximately baseline levels at the 13-month postimplementation data collection point would seem to indicate that it may take longer than three months for nurses to become comfortable with the practice of bedside report. To our knowledge, no other studies have monitored outcomes from a change to bedside nurse report for an extended period of time. Thus, these findings are significant in terms of providing quantitative support for continued monitoring of the implementation and outcomes of bedside report for at least a year postimplementation.

An area of concern in the study findings is that both patients and nurses reported some inconsistencies in bedside reporting after the practice change was implemented, despite additional interventions between the 3- and 13-month data collection periods focused on standardising the reporting process and supporting staff in implementation of bedside report. In review of the implementation process, the research team realised that it might have been more helpful to gather a larger group of change champions from all units and shifts to create a ‘critical mass’ of nursing staff that were in support of bedside report and demonstrated effective reporting processes.

Conclusions

Our patient survey and nursing instruments found several positive outcomes in relation to the implementation of a blended bedside shift report. Almost all of the 34 survey items indicated some improvement from baseline to 13 months postimplementation; however, the change was not significant for the majority of items. Nurse attitudes significantly rebounded on many issues from the three months postsurvey to the 13 months postsurvey. There was a decrease in falls at shift change. The only significantly negative outcome was nursing perception of the length of report, but this was not supported by overtime data. Over time, there may have been an increasing inconsistency in the performance of the blended bedside shift report.

Limitations

One of the identified study limitations was related to participant sampling; we used a convenience sample of medical-surgical patients scheduled for discharge and all nurses whose home unit was a medical-surgical unit. The patient and nurse respondents may not have fully represented the total population of patients and nurses on the study units. Additionally, as the nurse survey did not collect identifiers and no limitations were imposed on the number of surveys submitted from any one computer ISP address, it is possible that nurses may have completed more than one survey either during the baseline or the two postimplementation data collection times. Both patients and nurses reported some inconsistencies in the use of the blended bedside reporting process, but we did not measure the degree or frequency of these inconsistencies. Our recommendation to others measuring the outcomes related to the implementation of bedside report would be to include one or more items in both the patient and nurse surveys that would be able to quantify any inconsistencies in implementation. Finally, a practice change unrelated to bedside report (implementation of a new medication error reporting system), impacted the data collected for this study, making full comparison of medication error data impossible. This did not affect the collection of our patient falls data in any way though.

Relevance to clinical practice

Based on the findings of this practice change evaluation study, we suggest that a blended form of recorded and bedside shift report may improve patient perceptions of communication among nurses, patient involvement in care and patient safety, as well as nurse perceptions of accountability and promotion of patient safety, without significantly impacting nurse overtime. A blended report mechanism may also impact the frequency of medication errors and patient falls at shift change. However, this blended report format may be perceived by nursing staff as less efficient than a...
totally recorded report format, particularly within the first few months after implementation. As with all practice changes, it is important to address perceived barriers to the new practice behaviour, to continue to reinforce appropriate behaviour and to periodically monitor process and outcome variables. Monitoring should continue for at least a year post-implementation of the practice change. It may also be helpful to have several change champions on each shift to promote and support the move to bedside report, in order to quickly attain a critical mass of nurses who are implementing the process as it was envisioned. Additional studies on quantifiable outcomes of a blended recorded and bedside shift report process are warranted in all areas/specialties of acute care facilities, in order to provide additional documentation of ‘best practices’ in terms of nursing shift report.

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Disclosure

The authors have confirmed that all authors meet the IC-MJE criteria for authorship credit (www.icmje.org/ethical_author.html), as follows: (1) substantial contributions to conception and design of, or acquisition of data or analysis and interpretation of data, (2) drafting the article or revising it critically for important intellectual content, and (3) final approval of the version to be published.

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