Use of an Evidence-Based Shift Report Tool to Improve Nurses' Communication

Kristy Chung, Irene Davis, Samira Moughrabi, and Anna Gawlinski

Using steps in the Iowa Model of Evidence-Based Practice, nursing staff developed and piloted a standardized shift report tool on one medical-surgical unit in a large tertiary care hospital. Pilot outcomes showed shift reports with decreased frequency of missed information, fewer delays in shift starting time, and less use of overtime.

The change-of-shift report is an integral part of nurses' daily practice, when nurses ending their shift transfer critical information to nurses starting the next shift to ensure the delivery of safe, holistic patient care (Caruso, 2007; Mosher & Bontomasi, 1996; Riegel, 1985). Nurses use the essential patient information communicated during shift report to make decisions and provide appropriate care (Hopkinson, 2002). An effective, informative shift report can promote continuity of care and facilitate decision making that helps nurses prioritize patient needs in a timely manner. On the other hand, an inconsistent or poorly structured shift report can cause confusion. Rendering nurses unable to effectively assess, evaluate, and prioritize critical information, it thus can jeopardize patient care (Elm, 2004; Sexton et al., 2004). The importance of shift report as a communication tool is reflected in the National Patient Safety Goals of the Joint Commission. In response to communication issues cited as a root cause in more than 80% of reported sentinel events, the Joint Commission (2009) recommended organizations implement standardized interactive hand-off reporting systems that allow asking and responding to questions between involved health care providers.

Despite the critical nature of shift-reporting processes in the care of acute and critically ill hospitalized patients, nurses may lack knowledge and have insufficient content guidelines to give a concise, organized report. Accurate, organized communication of information during shift report may be hindered further by other factors commonly experienced by nurses at the change of shift, such as physical and mental fatigue, heightened unit activity, and frequent distractions due to competing demands (Streitenberger, Breen-Reid, & Harris, 2006). Literature supports the use of a standardized process to facilitate a more accurate, comprehensive, and organized end-of-shift report that allows oncoming nurses to plan patient care effectively (Hays, 2003; Kerr, 2002). Successful shift reports are particularly important for novice nurses, who may find it difficult to obtain all pertinent patient information because of limited experience, quick patient turnover rates, and time (Raines & Mull, 2007). The purpose of this article is to describe a unit-based demonstration project implementing a standardized, evidence-based tool that resulted in improved shift-reporting processes.

Scope of the Problem

Continuity of care relies heavily on passing pertinent, accurate information from nurse to nurse at the end of a shift. The authors' baseline observations of shift-reporting processes in an intermediate care medical-surgical unit at a large tertiary care center revealed problems due to the poorly designed framework for the shift report (see Figure 1) and practices used by the nursing staff. During change of shift, verbal reports had variable content, and information was missed in several cases. Areas that were missed or not reported in a timely manner could affect the patient's plan of care adversely. For example, if the nurse did not report the patient was scheduled for a diagnostic test requiring fasting and the patient was fed, delays in diagnosis and treatment as well as prolonged hospital length of stay could result. Nursing time was spent searching for missed information. Nurses reported increased use of overtime and expressed uncertainty about the plan of care for some patients.

Kristy Chung, MSN RN, was a Clinical Nurse III, Medical Unit, Ronald Reagan UCLA Medical Center, Los Angeles, CA, at the time this article was written. She is now a Nurse Practitioner, Pepsi-Co, Torrance, CA.

Irene Davis, RN, was a Clinical Nurse III, Medical Unit, Ronald Reagan UCLA Medical Center, Los Angeles, CA, at the time this article was written. She is now a Nurse Practitioner, Santa Monica-UCLA Medicial Center & Orthopaedic Hospital, Los Angeles, CA.

Samira Moughrabi, PhD, RN, was a Clinical Nurse Specialist, Acute Medical Unit, Ronald Reagan UCLA Medical Center, Los Angeles, CA, at the time this article was written. She is now Assistant Professor, Wayne State University, College of Nursing, Detroit, MI.

Anna Gawlinski, DNSc, RN, is Director of Research and Evidence-Based Practice, Ronald Reagan UCLA Medical Center, and Adjunct Professor, UCLA School of Nursing, Los, Angeles, CA.

FIGURE 1.
Original Shift Report

Room: _____ Patient Name: _____ Medical Record #: _____

Gender: _____ Age: _____ Service: _____

DX: _____ Vital Signs: _____

Diet: _____

Fluid/Diet Restrictions: _____

Hold: _____ Snack: _____ Cal Ct: _____ WP Food: _____

Nutrition Consult: _____

Activity: _____

Acuity: _____

These observations were confirmed by anecdotes shared by nurses in the unit during interviews by the authors. Some observations regarding the shift report include the absence of a basic guideline specifying what information should be included, unstructured reports with variable content, and inconsistent shift-reporting standards. These problems had even greater impact for novice and new graduate nurses working on the unit. Discussions with novice and new graduate nurses revealed more distress with the process of shift report. They felt unprepared, and sensed their report process was inefficient. When they were observed, newer nurses either gave too much and unnecessary information or too little information.

To address this clinical problem, authors reviewed the literature for research and other evidence-based information on effective shift-reporting tools and processes. Various data sources (PubMed, CINAHL, and Google Scholar) and selected search terms (*change-of-shift-report*, *handoff communication*, *shift report*, *nursing report*, *end-of-shift report*, *nursing communication*) were used to identify relevant articles. Using the Iowa Model (Titler et al., 2001), authors spearheaded an evidence-based change project to develop a standardized change-of-shift reporting tool. Project goals were (a) more thorough shift reports, (b) decreased frequency of missed information, (c) less time spent by nurses searching for missed information, (d) fewer delays in shift starting time, and (e) less use of overtime (paid and unpaid).

Evidence-Based Literature

The critical nature of the shift report as an important communication tool is well recognized by the nursing profession (Benson, Rippin-Sisler, Jabusch, & Keast, 2007; Hansten & Washburn, 1999; Miller, 1998; Mosher & Bontomasi, 1996). Consensus among nursing scholars indicates shift report is an important nursing process that results in several beneficial outcomes for patients, nurses, and organizations when efficiently conducted. However, little consensus exists about the necessary elements of the report process. Elm (2004) addressed the development and implementation of an effective, efficient shift report tool, for example. Miller (1998) anecdotally recommended use of a preprinted shift-report tool to record information as well as development of a shift-report guideline to delineate the content and process of reporting. Likewise, McKenna and Walsh (1997) recommended use of guidelines to improve shift-report consistency and quality.

Many publications on shift reporting have described clinical (nonresearch) projects conducted in individual nursing units (Baldwin & McGinnis, 1994; Benson et al., 2007; Caruso, 2007; McKenna & Walsh, 1997; Mosher & Bontomasi, 1996), emergency departments (Brown Lazzara, 2004), and office-based outpatient clinics (Fenton, 2006). All assumed a structured shift-report tool was the most effective means of communicating pertinent patient information. A common denominator of these clinical projects was that a problem was noted in each facility to instigate a need for change. However, each project was unique in how the problem was approached.

For example, in an attempt to promote high-quality patient care through a comprehensive and organized shift report, Elm (2004) identified important aspects of shift report to create and implement a standardized shift report specifically for a labor and delivery unit. A standardized shift-report tool was beneficial in organizing report content and thereby improving the retention and recall of the information communicated between the nurses on the two shifts. In another clinical project, Benson and colleagues (2007) conducted written assessments and held discussion meetings with staff members to gain better understanding of current change-of-shift reporting processes. They noted 50% of reports were verbal, 30% were taped, 10% were written, and 10% were given by other methods (e.g., voicemail, electronic). Nurses commonly identified a challenge in staying within the time frame for report, which took 15-45 minutes. Reasons for exceeding the time limit included high patient acuity, irrelevant information, and distractions. Facilitators of shift report were communicating shift-report information in an organized manner and using a preprinted report tool. Authors found implementation of shift-report guidelines and use of a standardized tool were effective in assisting nurses from several patient care areas to organize report and track patient care events and tasks throughout the shift. In a third clinical study, Baldwin and McGinnis (1994) found the use of a standardized computer-generated shift-report form and guidelines reduced overtime and improved communication of relevant informa-

tion about patients. Other clinical projects (Mosher & Bontomasi, 1996; Reiley & Stengrevics, 1989) established the effectiveness of a structured, standardized shift report (problem-oriented or patient-oriented) in reducing report time and eliminating irrelevant information.

Published scholarly studies are limited. They focused on evaluating different models (Björvell, Wredling, & Thorell-Ekstrand, 2003), content, and functions of shift report (Hopkinson, 2002). More recently, studies have focused on the effectiveness of bedside shift reporting when patients are included in the handoff process (Anderson & Mangino, 2006; Kassean & Jagoo 2005).

In their qualitative study, Sexton and co-authors (2004) observed and audio-taped 23 nursing shift reports in a general medical ward. Nurses on that unit used a bed list with patients' names and diagnoses to record the information they received during shift report. Analysis showed shift report took 15-40 minutes. The lack of structure and specific guidelines rendered shift report ambiguous and irrelevant, which in turn increased confusion about patient status, treatments, and care. Authors concluded the presence of specific guidelines regarding the process and content of shift report may reduce the amount of irrelevant information and allow more time for nursing tasks. Using an experimental design, Dowding (2001) found only half the information communicated in shift report was recorded accurately. These findings suggested nurses could perceive more than 50% of report content as "unimportant" (Dowding, 2001, p. 844). A shift report that had "triggering cues" or "consistent format or schema" significantly increased nurses' ability to record and recall accurately the information they heard (Dowding, 2001, p. 839).

With a sample of 60 medical-surgical patients, Lamond (2000) qualitatively investigated the content of shift reports and examined how nurses processed information obtained during shift report when planning patient care. Shift reports and documentation were analyzed for type, amount, and order of information obtained. Shift reports contained information the investigator labeled as *forceful feature information* (e.g., weight, pulse, intake, and output), which acted as a trigger for nurses to access knowledge about the patient that was stored in their long-term memory. The author concluded the presence of this type of information facilitates communication of important information about patients and ultimately may lead to more effective patient care planning.

Despite some limitations (e.g., limited generalizability and the use of hypothetical or fabricated shift report situations) (Dowding, 2001; Lamond, 2000; Sexton et al., 2004), the literature revealed the need for a standardized shift-report tool that would provide a framework for communication and ensure important information was not missed. However, studies did not suggest the use of a specific shift report tool or template. All supported the use of a shift-report tool to organize the content and flow of information and provide prompts that would in turn reduce variability in report quality from nurse to nurse (Miller, 1998). Problems associated with individual differences in the quality of shift-reporting processes included inefficiencies in shift starting times and delays of up to 2 hours in the nurses' ability to provide patients with initial care (Hansten & Washburn, 1999).

Interventions for Project Development and Implementation

According to the evidence-based process in the Iowa Model (Titler et al., 2001), the first step after evidence appraisal was to develop and standardize the shift-report tool. Published reports emphasized the importance of shift-reporting processes, but only a handful of clinical, non-research articles provided samples of shift reports (with specific content and a basic template of a shift-report tool); rarely were data provided on the effect of implementing the new shift report (Baldwin & McGinnis, 1994; Brown Lazzara, 2004; Elm, 2004; Fenton, 2006; Mosher & Bontomasi, 1996; Raines & Mull, 2007). For example, a sample shift report used for nurses in labor and delivery did not include appropriate content for report by nurses caring for medical-surgical patients (Elm, 2004). Other authors (Mosher & Bontomasi, 1996) offered a shift-report tool that listed patient problems along with relevant information. However, this tool was too broad and lacked the specific prompts needed by nurses caring for acutely ill medical and surgical patients. Consequently, the first draft of the new report for the current project was developed as a combination of evidence in the literature and the project leaders' knowledge of shift reporting practices.

The first draft was refined further based on results of a 10-item preintervention (baseline) survey completed by 22 nurse volunteers. Nurses were asked about the following:

- Attitudes toward and perceptions of the current shift-report tool.
- Information that should be included in shift report.
- Information that was missed frequently.
- The amount of time required for nurses to search for missed information.
- Delays in shift starting time.
- Overtime (paid and unpaid).

The first four questions addressing nurse attitudes and perceptions used a 4-point Likert scale (1=*strongly disagree*, 4=*strongly agree*). Nurses then were asked to evaluate the content of the draft shift-report tool, commenting on what should and should not be included. The shift-report tool was revised based on survey data and feedback (see Figure 2).

The second step was to pilot the new tool via a small test of change. The same 22 nurse volunteers participated in a pilot study of the evidence-based, standardized shift-reporting tool to test its utility before implementation on the whole unit. An educational intervention (1-hour class) was developed and implemented. Nurses were taught how to

FIGURE 2.
New Shift Report for Four Patients per Page (Front and Back)

ACUTE CARE SHIFT REPORT

Room #	MRN: Patient Name: (Patient Label)	**Code Status:** **Advance d Directive:**	Admission Date:	Weight:
		Isolation:	ACTIVITY:	CCP:
		Team: Intern: Resident:	THERAPY: PT OT RT ST	
			Consults: Nutrition ☐ Spiritual ☐ Social ☐ Other ☐	
DX:		Diet / NPO / NPO p MN:	Restraints: Vest SR/ x2 x4 Expire: Date: Time: Needs renewal ☐	
ALLERGY:		TUBE FEEDS:	PRECAUTIONS: FALL / ASP / SZ FALL RISK SCORE:	
N: C: R: GU: GI: Skin: DSG: DRAINS:	PMH/PSH: Family Assessment: "What is the most important thing I can do for you?" **VITAL SIGNS/PAIN ASSESSMENT:**	Restrictions: Dialysis access: HD days: M T W Th F S Su Fluid removed: PIV ☐ Central Line ☐ IVF: **MEDS PO:** / **MEDS IV:**	**BED ALARM:** ON ☐ OFF ☐ REASON OFF: TESTS/PROCEDURES: **STATS/NEW ORDERS/MISCELLANEOUS:**	
Labs: Labs to be drawn/ Specimens to be collected:	Intake/Output:	VACCINES; PNEUMOCOCCAL ☐ FLU ☐ ACCU-CHECK:	Discharge Plan of Care/Expected date of discharge/MD plan of care: Teaching: CHF ☐ Smoking ☐ Stroke ☐ MI ☐ Other ☐ Nursing Plan of Care: Initiated ☐ Updated ☐ New ☐	

Room #	MRN: Patient Name: (Patient Label)	**Code Status:** **Advance d Directive:**	Admission Date:	Weight:
		Isolation:	ACTIVITY:	CCP:
		Team: Intern: Resident:	THERAPY: PT OT RT ST	
			Consults: Nutrition ☐ Spiritual ☐ Social ☐ Other ☐	
DX:		Diet / NPO / NPO p MN:	Restraints: Vest SR/ x2 x4 Expire: Date: Time: Needs renewal ☐	
ALLERGY:		TUBE FEEDS:	PRECAUTIONS: FALL / ASP / SZ FALL RISK SCORE:	
N: C: R: GU: GI: Skin: DSG: DRAINS:	PMH/PSH: Family Assessment: "What is the most important thing I can do for you?" **VITAL SIGNS/PAIN ASSESSMENT:**	Restrictions: Dialysis access: HD days: M T W Th F S Su Fluid removed: PIV ☐ Central Line ☐ IVF: **MEDS PO:** / **MEDS IV:**	**BED ALARM:** ON ☐ OFF ☐ REASON OFF: TESTS/PROCEDURES: **STATS/NEW ORDERS/MISCELLANEOUS:**	
Labs: Labs to be drawn/ Specimens to be collected:	Intake/Output:	VACCINES; PNEUMOCOCCAL ☐ FLU ☐ ACCU-CHECK:	Discharge Plan of Care/Expected date of discharge/MD plan of care: Teaching: CHF ☐ Smoking ☐ Stroke ☐ MI ☐ Other ☐ Nursing Plan of Care: Initiated ☐ Updated ☐ New ☐	

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use the comprehensive, standardized shift-report tool, as well as the rationale and supporting evidence for the overall project. The class was repeated three times to meet the schedule needs of the 22 nurses. In addition, the pilot project was discussed at monthly staff meetings to familiarize other nurses with the initiative.

Within the pilot phase, the standardized change-of-shift report tool was used by the same 22 nurse participants. One-on-one coaching, mentoring, and feedback about effective use of the shift-report tool were used by the two nurse project leaders during this 2-month period. Daily monitoring and feedback mechanisms were implemented to increase staff nurses' consistent use of the tool. To evaluate progress in making this evidence-based change, nurses completed shift-report tools after every shift and placed these in a designated folder. If the nurse was returning the next day and needed the shift report, the nurse photocopied the shift-report tool and placed it in the folder. The project leaders collected and evaluated the shift-report tools for thoroughness and accuracy. Nurses were asked to write comments on the shift-report tool if they thought any sections needed additional information, or were underused and could be removed. This process provided additional data to refine the shift-report tool.

The final step of the pilot phase was to brainstorm strategies to make the standardized shift-report tool easier for nurses to use. Strategies included placing the tool on the hospital-wide forms portal for nurse access. Monitor technicians also were involved, pre-labeling the shift-report tools with patients' names so nurses could retrieve their respective patients' shift-report tools before report. Finally, the project leaders wrote a guideline describing use of the standardized shift report. Directions included how to complete task-oriented areas of the tool and use this important information to develop the patient's plan of care. The guideline was implemented after pilot study completion, when the project was expanded to the whole unit and incorporated into new graduate nurse orientation and nurses' annual skills labs.

TABLE 1.
Nurse Volunteer Demographic Characteristics

Variable		Nurses	
		No.	%
Age	20-30	13	59
	31-50	9	41
Sex	Female	21	96
	Male	1	4
Clinical ladder	Clinical nurse I	5	23
	Clinical nurse II and III	17	77
Shift worked	Days	5	23
	Nights	4	18
	Rotate	13	59
Years of nursing experience	<1	3	13
	1-5	15	68
	≥ 6	4	19
Years worked on unit	<1	4	18
	1-5	13	59
	≥6	5	23
Bachelor's degree in nursing	No	7	32
	Yes	15	68

Results After Project Implementation

Two months after piloting the standardized shift-report tool, project leaders and their clinical nurse specialist mentor evaluated the effect of the new reporting structure and process on previously identified problem areas and on outcomes identified in the literature. The original 10-item survey tool was administered again to the 22 nurse volunteers. The majority of nurses were female ages 20-30 and had 1-5 years of experience (see Table 1 for demographics).

Using paired t-tests, authors identified differences in nurses' responses to the survey tool before and after the intervention (see Table 2). Response to the statement, *"I feel that implementing a standard change-of-shift report will provide a more thorough and accurate report about the patient,"* showed a higher level of agreement after the intervention (means 3.36 and 3.68 respectively; p=0.03). Nurses indicated that after the intervention, the time required to organize their shift (means 2.77 and 1.64; p<0.001) and prioritize their work (means 3.23 and 1.82; p<0.001) decreased significantly. Although not significant, a clinically meaningful decrease resulted in the time to locate missed information (means 3.05 and 2.59; p=0.06). The actual amount of time required to locate missed information decreased from 28 minutes pre-intervention to 21 minutes post-intervention.

Using the chi-square statistic, Freidman non-parametric test of mean ranks, authors computed the frequency with which nurses reported starting the shift late. This also decreased significantly after the intervention (mean 1.68 events before and 1.32 events after the intervention; p=0.05). Reported epi-

TABLE 2.
Nurse Volunteer Survey Responses

Variable	Mean Before Intervention n=22	Mean After Intervention n=22	t-Test	df	*p* Value
Accurate report	3.36	3.68	-2.31	21	0.03*
Time to organize	2.77	1.64	4.93	21	< 0.001*
Time to prioritize work	3.23	1.82	6.27	21	< 0.001*
Time to locate missed information	3.05	2.59	2.02	21	0.06
Variable	**Mean Before Intervention n=22**	**Mean After Intervention n=22**	**Chi-Square**	**df**	***p* Value**
Frequency of starting shift late	2.26	1.38	3.77	1	0.05*
Frequency of overtime	0.95	0.64	1.00	1	0.317

* $p \leq 0.05$

sodes of overtime decreased from a pre-intervention mean of 1.57 to 1.43 after the intervention, but the difference was not significant (p=0.32) (see Table 2).

In response to an open-ended question about content areas that were missed frequently in shift report, nurses described 10 areas before the intervention (see Table 3). Those areas were no longer reported as missing after the intervention (see Table 4). Project leaders analyzed the shift-report tools (n=44) collected during 1 month of the pilot study. In the first 2 weeks of the intervention, 14 of the 22 shift reports (64%) were complete; during the last 2 weeks of the intervention, 18 of the 22 (82%) shift reports were complete. Analysis of the actual shift reports in early implementation indicated 14 sections were missed commonly (e.g., diet, allergies, psychosocial history). Through ongoing coaching and feedback, the number of missed sections decreased to six. These missed items included code status, admission date, intern names and numbers, discharge plan, diet, and allergy.

TABLE 3.
Areas Missed in Shift Reports Before Shift-Report Tool Implementation

- New admission orders
- Off monitor orders
- Laboratory test ordered or results
- Treatments
- As-needed medications for high blood pressure
- Cardiac monitoring/telemetry
- Tasks to be done
- Physician pager
- Wounds
- Fall precaution

TABLE 4.
Areas Missed in Shift Reports at Late Implementation Phase

- Code status
- Admission date
- Intern names and numbers
- Discharge plan
- Diet
- Allergy

Limitations

The design of the standardized shift report was based on current best evidence and unit needs. Consequently, results and tool may be applicable only to similar medical-surgical settings. However, the newly developed tool has been effective in achieving project goals. The unit improved the thoroughness and completeness of shift reports, reduced the amount of time spent by nurses searching for missed information and starting their shift, and decreased the use of overtime.

Summary

Shift-reporting structures and processes can be improved by assessing current shift-reporting practices, developing an evidence-based process improvement intervention, and evaluating the impact on outcomes. Implementation of a standardized, evidence-based nursing shift-report tool on a medical-surgical observation unit improved the hand-off report in several ways. The tool has been effective in increasing the thoroughness of shift reports; and in decreasing the frequency of missed information and the amount of time required for nurses to search for missed information. Use of the tool also had decreased delays in shift starting time and use of overtime. Nurses at the point of care delivery played a key role in developing and successfully implementing a standardized, nursing shift-report tool. MSN

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