MICROSYSTEM ASSESSMENT PROJECT: CHANGE OF SHIFT REPORT AT A

MONTANA CRITICAL ACCESS HOSPITAL

by

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ABSTRACT

Change of shift report that is poorly executed can result in missed information and poor communication between nurses, directly affecting a nurse's ability to deliver safe, efficient, and appropriate patient care. The purpose of this project was to assess the quality of communication during change of shift report on the acute care unit of a CAH in central MT and determine if current practice adheres to The Joint Commission recommendations. This project utilized a cross-sectional design to collect baseline data about the structure, process, and outcomes that influence the quality of communication during change of shift report. The Dartmouth Institute's Clinical Microsystems Approach was used to guide the assessment of this microsystem. Data were collected via administrator interviews, patient and nurse questionnaires, and investigator observation of the change of shift report process   Administrators ($n=3$) who were interviewed agreed that inadequate change of shift report can negatively impact patient safety and diminish patient and nurse satisfaction.   However, none of the administrators were aware of any policies that were in place to govern the process of communication change of shift report. Nurses ($n=27$) reported high levels of satisfaction with the current taped method of change of shift report, yet only 1 of 58 possible categories of patient information (patient name) was mentioned in every episode of report for individual patients. Categories that were reported less than 10% of the time included patient allergy status and patient code status. Patients ($n=4$) reported high levels of satisfaction with nurse-to-patient communication despite the finding of poor nurse-to-nurse communication during change of shift report sessions. Several opportunities for improvement in the quality of communication during change of shift report were identified in this clinical microsystem assessment. The structure of report could be enhanced by creating specific policies and procedures that reflect best practice. Education about these policies and procedures should be included in orientation and annual competency assessments.   Methods for monitoring outcomes related to the quality of communication during change of shift report need to be developed.

INTRODUCTION

Change of shift report, the transfer of patient information and responsibility from

one nurse to another at the change of shift, is a fundamental element of health care

communication and can significantly influence the quality and safety of patient care

(Blouin, 2011; Haig et al., 2006). Change of shift report, also known as "hand-off,"

"handover," "shift report," or simply, "report," occurs when the off-going nurse provides

a summary of care given, patient status, and future patient care needs in an effort to

promote best nursing practices and patient safety (Caruso, 2007). Information that is

inadvertently missed or omitted during the report process leaves a nurse unprepared to

deliver appropriate care and can have a devastating effect on patient outcomes (Haig et

al, 2006).

The Joint Commission has identified several factors of communication that should

be included in a shift report in order to maximize patient safety. Likewise, the Institute of

Medicine (IOM) has also proposed that healthcare facilities strive to improve care in six

specific areas that would result in patients receiving care that is safer, more reliable, and

responsive to their individual needs. The IOM's plan for accomplishing this goal

includes the six aims of providing health care that is safe, effective, patient-centered,

timely, efficient, and equitable ("Institute of Medicine", n.d.). In order to maximize

clarity of communication during the change of shift report procedure, the process should

involve interactive communication between both the givers and receivers of information,

up-to-date information on patient status, opportunity to ask questions and receive

feedback/clarification, and minimization of interruptions (AHRQ, Publication No. 08-

0043, April 2008). A change of shift report process that meets The Joint Commissions

goals will also meet the IOM's aims of improving patient care in areas of safety,

effectiveness, patient-centeredness, timeliness, and efficiency. Despite the

implementation of The Joint Commission's National Patient Safety Goal 2 to improve the

effectiveness of communication among caregivers and requirement to standardize

handoff communications, communication remains one of the top three root causes of all

sentinel events reported from 2009 through the third quarter of 2011 (Joint Commission,

2011).

Local Problem

The focus of this study, a critical access hospital located in rural central Montana,

presently uses the taped report method for change of shift report on the acute care unit.

Although taped report is the method of choice, currently there is no policy or procedure

guiding this procedure. The current practice, as described by the nursing supervisor, is

that the off-going nurse tapes the report up to two hours prior to the actual end of the shift

(S. Wilber, personal communication, September 11, 2011). The nursing leadership was

concerned that this method of shift report does not comply with The Joint Commission

regulations designed to maximize communication and clarity regarding patient status,

potentially increasing the risk of patient harm or death.   However, there was no evidence

to determine if this is the case. There was also no information available about nurse

satisfaction with the current method of shift report or patients' perception of how

involved they are in their care. A comprehensive assessment of the structure, process,

and outcomes related to change of shift report was needed to determine if the facility complies with The Joint Commission regulations. The assessment was designed to provide baseline information for future improvement activities.

Setting

The setting for the study was a critical access hospital (CAH) located in central Montana. It serves approximately 7,000 people who live in the region (over 17,000 square miles in central Montana). The CAH provides 24-hour emergency care, a range of inpatient services including emergency, acute, intensive, and obstetrical care, and diagnostic services (sleep study, xray, CT/MRI). The CAH also has an adjacent 85 bed nursing home. Patients with injuries or illnesses that exceed the scope of this facility are usually transported via ambulance, fixed wing or helicopter to Great Falls or Billings, MT, weather permitting.

Medical services are provided by seven family practice physicians and four emergency room physicians. The acute care unit which was the focus of this project has twenty-five beds and a staff of approximately twenty-six registered nurses. There are 14 full time, 7 part time, and 4 per diem nurses on staff as of December 1, 2011. At the time of the study there were 13 Associate Degree prepared nurses, 12 Bachelor's prepared nurses, and no master's prepared nurses. The maximum nurse:patient ratio was 1:6, with 2 nurses usually scheduled for each 12 hour shift (staffing adjusts based on patient census). The daily patient census ranged from four to 13 patients and average patient stay was 2.5 days (S.Wilber, personal communication, September 11, 2011).

Purpose of Project

The purpose of this project was to assess the quality of communication during change of shift report at a CAH in central MT and determine if current practice adhered to The Joint Commission recommendations. The project also provided baseline data for planning future improvements in change of shift report that may be needed. The specific aims of the project were:

1. Describe key structure, process, and outcomes associated with communication at change of shift report at a CAH acute care unit in central MT;

2. Identify gaps in quality of communication at change of shift report at a CAH acute care unit in central MT.

LITERATURE REVIEW

The purpose of the this literature review was to provide a brief overview of the literature that has informed the development of this project. The review begins with a brief overview of quality management followed by a description of search methods and detailed review of the literature that describes the structure, process and outcomes of change of shift report. The chapter ends with a brief description of the conceptual framework guiding this project.

Description of Search Methods

This literature review search utilized the following databases: CINHAL, Cochrane Library, Health and Wellness Resource Center, Medline, Pubmed, and Health Reference Center. The search was also supplemented by combing the search results citations and references and the AHRQ Nursing Handbook Publication was used to identify potential articles that might be useful to this topic. The following search terms were used: *bedside change of shift report, change of shift report, walking rounds (nursing), walking rounds (medical student), grand rounds (nursing), grand rounds (physician), bedside shift report, face to face shift report, taped shift report, efficacy of change of shift report, efficacy of bedside shift report, safety and bedside change of shift report, safety and change of shift report, patient satisfaction and change of shift report, patient satisfaction and bedside change of shift report, handover, patient satisfaction, patient satisfaction and perception of care, patient satisfaction and walking rounds, patient satisfaction and measuring, patient satisfaction and factors, hospitalized adults, quality of care, critical*

access hospital. Articles included in the initial literature review were those that

addressed bedside shift report (various forms) nursing communication, and patient

satisfaction, were peer reviewed, less than 5 years old, and English speaking. The initial

search produced 85 articles, of which 26 articles were applicable to the topic of interest.

Of these, fourteen (14) were non-empirical but specifically described processes and

interventions for change of shift report, implementing bedside change of shift report,

sentinel events, and aspects of critical access hospitals. Nine (9) were observational

studies separately describing attributes of change of shift report or patient satisfaction,

one (1) literature review of change of shift report methods .

OVERVIEW OF QUALITY MANAGEMENT

The Institute of Medicine (IOM) defined quality as "the degree to which healthcare services increase the likelihood that desired outcomes are consistent with professional knowledge available at the time care is provided to individuals and populations" (Cesta & Tahan, 2003, p. 254). Defining exactly what constitutes quality is very difficult: quality care as defined by the facility is often completely different from what a patient decides has been a quality experience. Characteristics of quality include (but are not limited to) effectiveness, efficiency, balance of cost and care provided, acceptability, equity, availability, timeliness, continuity, and safety. In addition to meeting the aforementioned facility-determined characteristics of quality, care must be administered in such a way that also takes into account the patient's perceptions, values, and expectations (Cestan & Tehan, 2003).

Up until the mid-1980's, healthcare measured quality under the umbrella of measures, concepts and process included in quality assurance (Cesta & Tehan, 2003). Quality assurance programs were designed to maintain or assure a certain predetermined level of standard of care, expectation, activity or proces (Cesta & Tehan, 2003). Frequently this was performed as retrospectively evaluating errors and problems in care. As a result, quality assurance "was a mechanism for developing predetermined standards of care, implementing strategies for assuring those standards were met, and designing an action plan to address staff/provider noncompliance." (Cesta & Tehan, 2003, p. 256). Quality assurance programs focused on identifying a certain level of performance, known as a threshold. These thresholds were the minimum level of performance that an

organization would be expected to achieve (Cesta & Tehan, 2003). Essentially, as long as the threshold goal was being met, the organization was confident that quality care was being provided. The inherent downfall to this system is that quality assurance did not develop an infrastructure for performance improvement, nor did the system expect performers to exceed the threshold once it was met (Cesta & Tehan, 2003).

With the astronomical rise in health care costs that began in the mid to late 1980's, organizations began to search for mechanisms that would improve quality as well as maintain it (Cesta & Tehan, 2003). This change in focus coincided with a restructured reimbursement system that rewarded doing more with less, and a new focus on exceeding, not just meeting, standards. As a result, total quality management (TQM) was developed as an improvement vehicle designed to facilitate a health organization's ability improve quality of care. Total quality improvement is a process that continuously assesses and evaluates the structure of care, processes, and outcomes that affect quality of care. The focus shifts from individuals to systems, processes, and outcomes (Cesta & Tehan, 2003). Ultimately, the current healthcare system is highly complex and unpredictable. Strategies to implement change not only require planning, but must do so on a constantly changing basis (Yoder-Wise, 2010).

According to Powell et. al. (2009), organizations who succeed in implementing TQM projects were able to tailor programs to their individual circumstances and approached TQM in multifaceted way. These organizations were able to address the following six interrelated core challenges:

1. Structural challenge: structuring, planning, and coordinating quality

    efforts and them embedding them within the fabric of the organization

2. Political challenge: negotiating the politics of change while securing an

    agreement to the common goals

3. Cultural challenge: building a shared understanding and commitment

4. Educational challenge: developing formal and informal learning

5. The emotional challenge: motivating staff to join and sustain the

    improvement effort

6. Physical and technological challenge: developing a physical and

    technological infrastructure that enables the improvement (Powell, et. al.,

    2009 p. 66)

Quality is typically measured by examining the structure of care, the technical and

interpersonal processes, and the outcomes that result from the interactions between

structure and process.

Figure 1. Linking the Structure and Process to Outcomes of Care: A well-designed
Structure of Care and Process of Care work together to achieve a desired Care Outcome
adapted from Cesta and Tehan, 2003)
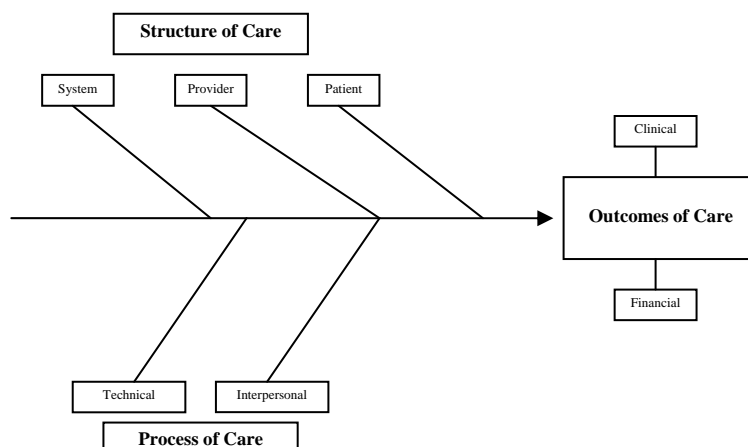
Structure of Care

The term structure of care describes system, provider, and patient characteristics that provide a foundation for the quality of care. These characteristics include the care setting and level of care provided, nature of the care delivery system (e.g. interdisciplinary approach), the credentials, competencies, and education levels of the providers, and the health status or condition of the patients (Cesta & Tehan, 2003). The structure of care can be classified by the following system, provider, and patient characteristics:

System Characteristics

System characteristics include organization of services, financial incentives, workload, specialty mix, policies and procedures, staff orientation, and physical equipment available for use. These elements are but a few of the system characteristics that make up a health care system and affect how an organization structures its care delivery system. Ultimately, they determine an organization's ability to achieve positive organizational and patient outcomes (Cesta & Tehan, 2003).

Provider Characteristics

Provider characteristics include age, gender, beliefs, level of experience, skill competency, job satisfaction, and willingness to change work habits and nursing practices. Each care provider possesses unique and highly individual characteristics that influence how that provider approaches a given problem or situation. The individual provider characteristics greatly influence how the group problem solves complex and

challenging situations (Cesta & Tehan, 2003). The "human side" of change refers to those staff responses to change that either facilitate or interfere with the change process. These responses range from full acceptance to outright rebellion (Yoder-Wise, 2010). For instance, some nurses might be very vocal and forthright about their dissatisfaction with the change, while others may simply and quietly undermine the change process. Still others might reject changes just to disagree with authority figures (Yoder-Wise, 2010).

Professional nurses are all taught to perform change of shift report though there is significant variation in the method utilized and included content (Caruso, 2007). One such complex problem is how to conduct a change of shift report. It would appear that changing methods of shift report is one of many nursing skills that can be easily adjusted and altered as needed. In reality, nurses often hold the act of shift report sacrosanct and are highly resistant to changing the current practice, whatever form it may take. This can be attributed to a general human aversion to change as well as the complexity of the shift change process. Superficially, shift report serves merely as a means to transmit patient data, assessment findings, and patient plan of care strategies, also known as overt functions (Scovell, 2010). Research has shown that there are other important functions that also occur during the shift report process (Lally, 1999; O'Connell, 2001; Philpin, 2006;, and Scovell, 2010). These other functions are not consciously or formally acknowledged during the report process but as the formally recognized overt functions of patient data transfer . The equally important "other" functions of change of shift report include:

- covert functions (social interaction between nurses)

- ritual functions (supporting the culture of nursing norms and values)

- supportive other functions (supportive measures and debriefing after a

   stressful patient situation) (Scovell, 2010, p 36)

Patient Characteristics

Patient characteristics include socioeconomic status, level of sickness, education

level, age, gender, and ethnicity. The patient (and care-giver) brings a highly unique and

individualized perception of themselves, what they view as quality care, and their ability

and willingness to participate in their care.   These characteristics greatly influence the

patient's participation in health care activities and response to interventions.   Ultimately,

the patient characteristics greatly determine the final outcome of individual patient health

care (Cesta & Tehan, 2003).

There is very little in the literature currently available on the topic of

communication at change of shift report that focuses on the structure characteristics

(outlined under structure of care, above). The literature does address the need to develop

a change of shift report system that adheres to The Joint Commission's recommendations

of standardizing the procedure. Building a system structure that allows the opportunity to

ask and respond to questions is of utmost importance (Adamski, 2007; Anderson &

Mangino, 2006; Caruso, 2007; DuFault, 2010; Groah, 2006; Trossman, 2009; Wilson,

2007).   Since each nursing unit will have different needs of information that should be

included, it was advised that a standardized change of shift tool be developed that should

be used by every nurse at every change of shift report (Adamski, 2007; Groah, 2006; Manning, 2006; Pothier et al, 2005; and Wilson, 2007).

<div align="center">Process of Care</div>

The process of care involves the technical and interpersonal procedures that providers use, methods deployed, and various technical and interpersonal techniques used when delivering health care services. The processes are the essentially how a microsystem gets from point A to point B. When combined with the structure of care, these processes determine an organization's ability to help patients achieve their expected outcome (Cesta & Tehan, 2003). According to Cesta and Tehan (2003), elements of the processes of care are divided into technical style (coordination, continuity, medication administration, physician ordering system, and scheduling) and interpersonal style (manner and demeanor, communication, patient participation, counseling and support).

Articles in the literature that examined on the area of process involved the technical aspects how a well-executed change of shift report will result in good coordination and continuity of patient care (Caruso, 2007; Groah, 2006; and O'Connell, 2001). Regarding the process element of interpersonal style and communication, Manning writes, "Nurses are imbedded in a complex network of clinical relationships, the most important being nurse-patient, nurse, nurse, and nurse-physician. Communication is the core of these relationships and is dependent on the nurse's ability to listen, assimilate, interpret, discriminate, gather, and share information in constantly changing systems made up of many disciplines and hierarchies. Communication is a complex phenomenon that includes skill, cognition, emotion, and value." (Manning, 2006, p. 268).

The Joint Commission (formerly the Joint Commission on Accreditation of Health Care Organizations, JCAHO), in its 2008 Hospital Patient Safety Goals Implementation Expectations for Handoffs introduced national patient safety goals on change of shift report hand-offs listed the following as being expected during shift report:

1. Interactive communications allowing for the opportunity for questioning between the giver and receiver of patient information

2. Up-to-date information regarding the patient's care, treatment and services, condition, and any recent anticipated changes

3. A process of verification of the received information, including repeat-back or read-back, as appropriate

4. An opportunity for the receiver of the handoff information to review relevant patient historical data, which may include previous care, treatment, and services

5. Interruptions during handoffs are limited to minimize the possibility that information would fail to be conveyed or would be forgotten. (Adopted from the AHRQ Publication No. 08-0043, April 2008, Chapter 34)

The goal of these guidelines was to identify new actions that had the potential to further protect and promote patient safety (AHRQ, No. 08-0043, April 2008, Chapter 34). Additionally, The Joint Commission listed the following strategies intended to improve handoff communication:

1. Use clear language and avoid use of abbreviations or terms that could be misinterpreted

2. Use effective communication techniques. Limit interruptions. Implement and

    utilize read-backs or check-back techniques

3. Standardize reporting shift-to-shift and unit-to-unit

4. Assure smooth handoffs between settings.

5. Use technology to enhance communication. Electronic records can support the

    timely and efficient transmission of patient information (Adopted from the AHRQ

    Publication No. 08-0043, April 2008, Chapter 34).

In a well-designed quasi-experimental study by Pothier, et al. (2005),
investigators examined the amount of patient information that was lost during different
types of change of shift methods. Methods studied were verbal only (no note taking),
verbal report with written notes, and report that involved verbal report with written notes
and the inclusion of a sheet with patient details on it. The investigators found that only
20% of important data was retained with a purely verbal report, and 60% with verbal and
written notes. Over 90% of important patient data was retained with verbal report
supplemented by a patient information sheet and written notes. The researchers
concluded that "The use of a pre-prepared handover sheet that is passed to the next shift
in conjunction with a verbal handover almost entirely eliminates the loss of patient data
during handover." (Pothier, et al., 2005).

In essence, the literature reveals that not only does shift report need to include the

communication goals set forth by The Joint Commission, but it also needs to fulfill the

overt, covert, ritual, and supportive other functions in order to be maximally beneficial to

both nurses and patients. Additionally, it needs address the IOM goals of being safe,

time efficient, patient centered, and provide for patient confidentiality. Outcomes of Care

Simply put, the outcomes of care are the goals of the care that is provided. Both

structures and processes work together to achieve the desired outcome of care. The

patient's ability to reach a desired outcome is dependent upon the selection of the most

appropriate process for realizing that goal. This in turn depends upon an organization's

ability to promote and support the care intervention (Cesta & Tehan, 2003). Groah wrote

that the desired outcome of a change of shift report that is standardized, uses a template,

and allows for face to face questioning will be to:

1. Increase the amount of information staff members relay and recall

2. Improve the continuity of care the patient receives

3. Bring order to the chaos that frequently occurs at the end of the shift or
   when one team member relieves another

4. Ensure health care providers are moving another step closer to providing
   an error free environment for (Groah, 2006, p. 229)

The outcomes of care are readily illustrated by the following patient value

compass (PVC) diagram. The PVC exists to provide a balanced view of clinical and

functional status, patient satisfaction with expectations for clinical management, and

other data on work status and costs of care (Nelson, et. Al., 2007). When combined with

the structure of care, the processes determine an organization's ability to help patients

achieve their expected outcomes (Cesta & Tehan, 2003). Adequately addressing these

processes during shift report enables the professional nurse to plan care that will

positively affect the functional status of patients, patient satisfaction, care costs, and

patient outcomes (Groah, 2006, p. 229

Figure 2. Values Compass (Nelson, et. al, 2011)
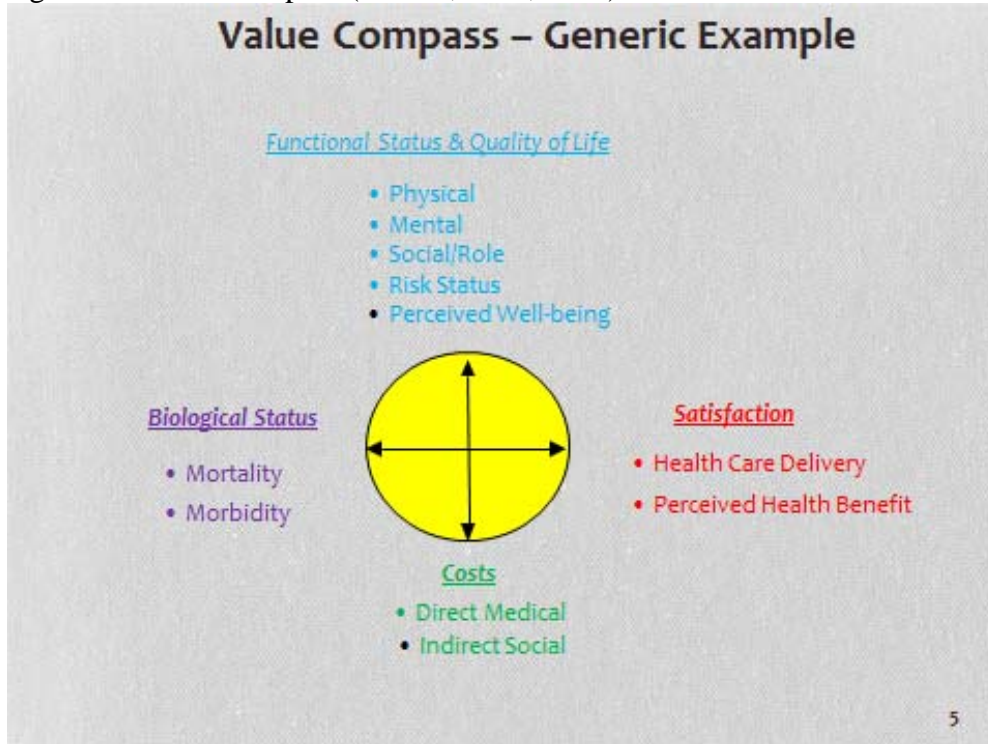
ROLE OF CLINICAL NURSE LEADER IN QUALITY MANAGEMENT

The American Association of Colleges Nursing (AACN) developed a new nursing role (Clinical Nurse Leader) that would address gaps in patient health care that resulted from the nursing shortage, aging population, fragmentation of health car, increased importance of health promotion/disease prevention, and rapid technological changes (AACN, 2007).This role was developed in response to the Institute of Medicine (IOM) 1999 report "To Err is Human: Building a Safer Health System". This report illuminated the problems in healthcare that resulted in approximately 44,000-98,000 deaths yearly from medical errors (AACN, 2007). It also focused on "the fragmented nature of the current health care delivery system and the context in which health care is purchased as being major contributors to the high and inexcusable error rate." (AACN, 2007).

The following assumptions are integrated into the new role:

1. The CNL will practice at the microsystem level (on individual hospital units)

2. Patient outcomes are the measure of quality practice

3. Practice guidelines are based on evidence

4. Patient centered client care is intra- and inter-disciplined

5. Information will maximize patient self-care and decision making

6. Nursing assessment is the basis of knowledge and theory development

7. Good fiscal stewardship is the condition of quality care

8. Social justice is an essential nursing value

9. Communication technology will facilitate the continuity and comprehensiveness of care

10. The CNL must assume guardianship of the nursing profession (Adapted from
the AACN's White Paper on the Education and Role of the Clinical Nurse
Leader, 2007, pp. 6-10)

The clinical nurse leader examines evidence-based outcomes to identify specific areas of improvement in a microsystem (nursing unit). The CNL then applies various strategies for implementing the desired change process that will result in achieving the desired patient outcomes.

CHANGE THEORY

Learning organization theory emphasizes flexibility and responsiveness in an organization's response to internal and external influences as a means of surviving in a highly unpredictable healthcare environment (Yoder-Wise, 2010). Enacting the following Senge's five disciplines of learning is essential to success:

1. System's thinking: the need for an organization to view the world as a set of multiple visible and invisible constantly interacting parts.

2. Personal Mastery: when an organization values and facilitates the development and deeper aspirations of its members in addition to professional proficiency.

3. Mental Models: Each individual (as well as each organization) base their activities on a set of assumptions, mental pictures, and beliefs about how the world should work.

4. Shared vision: Change leaders engage all members in merging personal visions of the future with a consolidated yet ongoing vision common to other members and leaders.

5. Team learning: the need for a functioning and cohesive group to learn and benefit from the abilities of each member, ultimately enhancing the overall outcomes of the team's efforts (Adapted from Yoder-Wise, 2010, p. 330)

Senge's work with the five disciplines of learning maintains that there are five areas of critical and interrelated elements that members of the organization must engage in when responding to change or learning from previous mistakes. The group can only

function effectively when all elements are present, linked, and interacting. Enacting the five disciplines of learning is essential to an organization being successful in identifying and responding to change (Yoder-Wise, 2010).

Additionally, when the "…mental models are uncovered and consciously evaluated, it's possible to begin to determine…their influence on work accomplishment" (Yoder-Wise, 2010, p. 330). By completing a thorough assessment of the current change of shift report process, staff will be able to examine current practice and critique their currently held beliefs regarding how the report process should occur. Any areas that need improvement can be identified as such and a plan for improvement, based on the staff's input can be developed.

Classic principles that characterize effective change implementation include:

1. Recipients of the change believe they own the change

2. Administrators and other key personnel support the proposed change

3. The recipients of change participate in identifying the problem warranting change

4. The change holds interest for the change recipient and other participants

5. Revision of the change goal and process is negotiable

6. The change process if designed to provide regular feed back to its participants (Adapted from Yoder-Wise, 2010, p. 340)

For the purposes of this project, Lewin's 3-step change process provided another useful framework that also guided the development of a short and long term plan for examining the change of shift report process and potential procedural improvements in

the health care setting (Lewin, 1947). The model is based on the theory that in an

organization desiring a given change, there are driving forces (those forces that favor

change) and opposing restraining forces (those forces that resist change). To successfully

implement a change process there must be an increase in the strength of the driving

forces and/or the restraining forces must be lessened or removed altogether (Borkowski,

2005). Organizations that successfully implement change will go through the three

stages of unfreezing, changing, and refreezing. Following is a brief discussion of each

phase.

<u>Unfreezing Stage</u>

During this stage, those involved in the change (especially those resistant to the

change) need to acquire an understanding of how the current practice varies from the

desired practice or behavior (Borkowski, 2005). This is the phase in which workers

identify how the current practice is not achieving the best-practice standard. Ideally a

thorough assessment must be done in order for managers to tie baseline data to relevant

outcome markers (i.e. patient safety, staff and patient satisfaction). This will enable the

staff to identify how the current practice is not meeting the desired standards of practice

in meeting patient safety (Borkowski, 2005).

<u>Change Stage</u>

This stage is when the new or revised policies and/or operating procedures are

implemented. It's important to note that the members of the workforces involved in the

change need to understand the need for and participate in the design of the new approach. This promotes staff "buy-in" and actually making the new method a success (Borkowski, 2005).

Refreezing Stage

The implemented changes are monitored and adjusted as needed (Borkowski, 2005). Staff is supported in continuing to perform the change and any alterations to make the changed method useable are identified and implemented.

Project management generally involves the two areas of establishing what needs to be done and determining how this will be accomplished (Harris et al., 2011). Organizations are often greatly challenged to identify the most effective strategy for a given situation and environment. Ideally, a comprehensive needs assessment involves a SWOT analysis (assessing strengths, weaknesses, opportunities, and threats) and a gap analysis (identifying the existing resources, political climate, and prevailing culture on the unit of interest) (Harris et al., 2011). Successfully completing a comprehensive needs assessment correlates to Lewin's Unfreezing Stage in that it will provide the data necessary to insure staff buy-in of the project.

CONCEPTUAL FRAMEWORK

This project focuses on Lewin's Unfreezing Stage of gathering baseline

assessment data to determine how well the current method of taped change of shift report

adheres to the Joint Commission's communication guidelines and will be accomplished

by using the first step of the Dartmouth Microsystems Improvement Curriculum (DMIC).

The curriculum provides a model to assess clinical microsystems and develop a

systematic plan (see the Dartmouth Microsystem Improvement Ramp below) for

improvement by addressing six levels of concern and then completing the Plan-Do-

Study-Act process (Nelson, et al., 2007).

The Dartmouth Curriculum model incorporates important perspectives of change

theory. First it guides the clinical microsystem assessment needed to develop a

systematic plan for identifying and diagnosing problems along with planning and

evaluating improvements. Then it focuses on the microsystem's performance regarding

the Institute of Medicine's six aims for improvement and incorporates the Plan-Do-

Study-Act cycle of improvement to address issues identified in the assessment process

(Nelson, et. al. 2007).

A brief description of the levels of the improvement ramp follows:

1. *Level 1: Assessment* – An assessment that describes the clinical microsystem

(a 5P assessment) is conducted to thoroughly assess the environment in which

the change process is to take place.   The term "5Ps" refers to the areas that

are the focus of the assessment (Purpose, Patients, Professionals, Processes,

and Patterns)

2. *Level 2: Theme* – A theme for improvement is selected based on the results of the 5P assessment

3. *Level 3*: *Global Aim* - This is a statement about the theme that clarifies, bounds, and connects the improvement theme to the daily work processes.

4. *Level 4 Specific Aim* - This involves process mapping (flow-charting) the improvement process and clearly articulating the identified improvements.

5. *Level 5: Change Concepts* – Determining the change that will result in the desired outcome

6. *Level 6: Measures* – Plan the outcome measures specific to the PDSA process

7. *PDSA Process* – Plan (identify the objective, plan the change), Do (carry out the plan), Study (analyze the results, Act (what changes are to be made).

8. *SDSA Process* – Once the facility has a method they want to keep: Standardize (standardize the process and embed in daily work), Do (what is being learned while standardizing? Are there any problems or surprises?), Study (what do the measures show?), Act (does the new standard new modifying? If yes, then start a new PDSA cycle) (Adapted from Nelson, et. al., 2007, pp. 221-226)

A comprehensive assessment of the clinical microsystem is the focus of this project. It is important to complete a full assessment of the microsystem prior to launching any improvements. The initial "5P" assessment should include elements of the following:

- Purpose: including specific goals of the microsystem

- Patients: characteristics of the patients that the microsystem serves

- Professionals: characteristics of the microsystem members who provide or contribute to patient care

- Processes: tasks or care processes that microsystem members participate in when providing patient care

- Patterns: observed or repeated behaviors exhibited by the microsystem members when providing patient care (Nelson, et al., 2007, pp. 261-263)

This comprehensive assessment provides the improvement team with important baseline information that can be used to develop a diagnosis, inform the course of action as the team advances along the improvement ramp, and evaluate the improvements after they are implemented.

Figure 3: Dartmouth Improvement Ramp (Nelson et al., 2007)
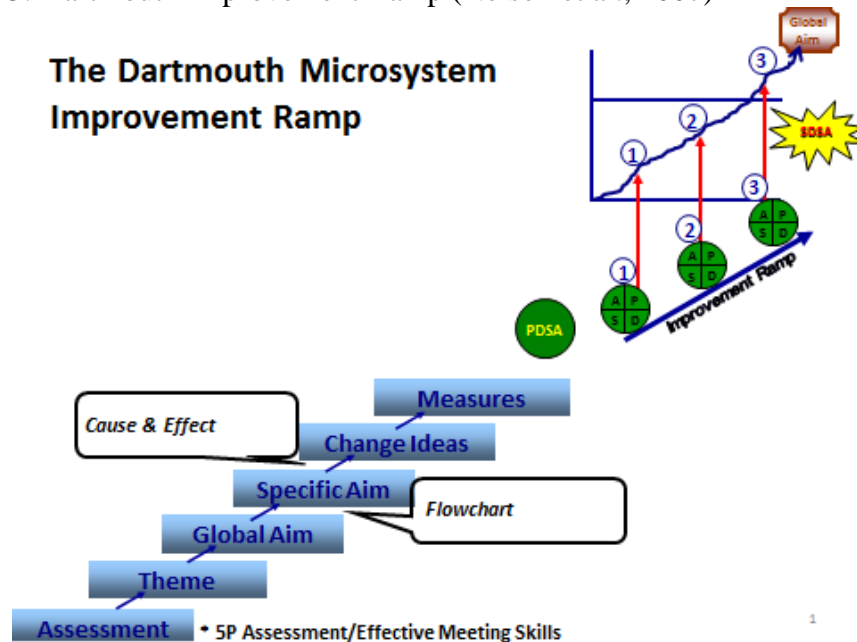
In Figure 3, the blue boxes represent the unfreezing phase of Lewin's change process, the PDSA cycle of improvement corresponds to the change phase, and the SDSA cycles promotes refreezing. The Dartmouth Improvement Ramp incorporates important processes that also strengthen the qualities of Senge's learning organization. For example, creating global and specific aims cultivates a shared vision within the microsystem. Constructing process flow charts challenges mental models that can inhibit communication and limit creativity. Participating in the comprehensive assessment raises awareness about the microsystem and one's role within it. This can enhance a sense of personal mastery along with an increased awareness of systems thinking. Lastly, this process is grounded in the notion of team learning, and encourages a spirit of inquiry within the team.

METHODS

Design and Overview

This project was the first step of a quality improvement project designed to enhance healthcare professional communication during change of shift. A cross-sectional design was used to collect data about the structure, process, and outcomes of change of shift report. A partial "5P" clinical microsystem assessment was conducted to obtain baseline data on the current status of the change of shift report method currently in use on the acute care unit at the critical access facility.

Setting and Sample

The setting for the study was a 30-bed acute care unit of a critical access hospital (CAH) in central Montana. The sample was drawn from professional registered nurse staff (n=26), administrators (n=4) who work on this unit, and patients (n=9) who were receiving care during the data collection period. The daily patient census typically ranged from 4 to 13 patients and the average patient stay was 2.5 days during the previous year (S.Wilber, personal communication, September 11, 2011). During the study, the daily census ranged from 4 and 8 patients.

Protection of Human Subjects

Privacy was protected for all participants and approval of the proposed study was obtained from the Montana State University Institutional Review Board (IRB) prior to

conducting the study. The protocol, information sheets, and all data collection tools for

the study were submitted for review. Participants were provided information about the

study, procedures for protecting participant identity and data, and the benefits and risks

associated with participating in the study. The information sheet clearly stated that

participation in this study was voluntary, and would not affect their ongoing care

(patients) or employment status (employees) at the health care facility. All participants

received a copy of the information sheet. Consent to participate in the study was

assumed if the participants returned the questionnaires or agreed to be interviewed.

There was minimal risk associated with participating in this study. Participants

were advised that they may experience fatigue and additional stress due to the burden of

answering questionnaires. Each participant had the option to cease participation at any

time during the data collection phase. Data collection began as soon as IRB approval was

obtained. The initial plan to collect data during 30 sessions (over 15 days) was limited by

the end date of the semester, May 4, 2012. This resulted in a total data collection period

of eight (8) days. A total of 15 report sessions (morning and evening) were attended, and

report for individual patients was observed 98 times.

Confidentiality of participants was strictly observed. Upon return of the

questionnaires all participants were assigned a unique code number for this study. All

data collection material was identified by the participant's unique code number only and

stored in a locked file. No identifying data was collected in the questionnaires. Only

authorized study personnel have access to the data.

Procedures

Information about the structure, process and outcomes of change of shift report was collected from administrators, professional employees of the critical access hospital, and patients who received care during the data collection period. Additional observations were recorded by the principle investigator.

Structure of Change of Shift Report

System Characteristics   Administrators who were invited to provide information about system characteristics included the Director of Nursing, Acute Care Nurse Manager, CEO of Central Montana Medical Center, and the Chief of Medical Staff. Participants were asked to read the information sheet. Consent to participate was indicated by agreeing to answer the interview questions. Three of the four administrators ($n=3$) agreed to participate (75% response rate). These administrators were interviewed by the investigator using the investigator-developed Administrator Interview Tool (see Appendix D). Each administrator was interviewed once for fifteen minutes. The administrator interview contained no identifiable data.

Information about the structure of change of shift report was obtained from the administrators who were asked about the current practice, policies and procedures governing change of shift report, methods for training staff about change of shift report, methods of measuring proper performance of change of shift report

Provider Characteristics   The acute care unit, which was the focus of this project, currently has a staff of approximately twenty-six registered nurses. There are 14 full time, 7 part time, and 4 per diem nurses on staff as of December 1, 2011. At the time of the study there were 13 Associate Degree prepared nurses, 12 Bachelor's prepared nurses, and no master's prepared nurses.   Data regarding previous experience with poor patient outcomes related to report, familiarity with The Joint Commission Guidelines for shift report, and beliefs about overall staff competency regarding change of shift report were also collected.

Patient Characteristics   Individual data on the patient characteristics of socioeconomic status, level of sickness, education level, age, gender, ethnicity, and caregiver attributes were not collected during this study. Only aggregate data regarding average length of stay and patient census were collected in this study

Process of Change of Shift Report

Information about the technical/overt and interpersonal/covert factors regarding the process of change of shift report was also collected during 15 episodes of change of shift report over an 8 day period. Using the Change of Shift Report Audit Tool (see Appendix A), the current taped report process was observed for adherence to The Joint Commission recommendations and inclusion of evidence-based relevant patient information. Both morning and evening shift report were observed for a total of 15 shift reports. The Change of Shift Report Audit Tool was coded by episode number only; nurses were not identified on this tool.

Nurses were asked to provide information about the overall quality of communication during each shift report received. A convenience sample of nurses was obtained for this study.   Each nurse who was present for the observed shift report was given the information sheet to read and then asked to fill out the Staff Nurse Post-Taped Report Questionnaire prior to leaving the shift report room. Consent was implied by completing the questionnaire (see Appendix B). A total of 27 nurse surveys were collected during the data collection period (n=27).   The Staff Nurse Post-Taped Report Questionnaire was also coded by episode number only.

Outcomes of Change of Shift Report

Data related to outcomes of change of shift report were collected from administrators, nurses, and patients. Administrators were asked to comment on the relationships between change of shift report, patient safety, and patient satisfaction. Nurses were asked to rate their satisfaction with the episode of report along with the quality of information provided, and whether or not the report episode allowed for debriefing. They were also asked if the change of shift report adequately prepared them to give prompt patient care. The amount of information relayed during report was also monitored as an outcome measure.

Patients were also asked to provide information about the overall quality of communication with the staff nurse as a measure of the outcome of report.   A convenience sample of patients admitted to the nursing unit was obtained for this study. Each patient was given the information sheet to read. Consent was implied if the patient completed the questionnaire (see Appendix C). A patient was asked only once to fill out

one questionnaire during his or her patient stay. The completed questionnaire was placed

in the envelope provided, sealed, and returned to the primary nurse. The primary nurse

placed the sealed envelope in the hospital outgoing mailbox.   Data collection continued

until the end of the data collection period. A total of 4 patient questionnaires were

returned (response rate of 44%).   Protected patient health information was discussed

between the nurses during report as part of their professional work, but this protected

health information was not collected in this study.   The Patient Satisfaction

Questionnaire contained no identifiable patient data.

Instruments

Staff Nurse Post-Taped Report Questionnaire

The investigator-developed staff nurse post-taped report questionnaire was

adapted from items used in similar studies completed by Ammentorp, et al., (2009) and

Halcomb, et al. (2011). This questionnaire is comprised of five questions that ask the

respondent to rate their perceptions of shift report. The questionnaire (see appendix B)

used a scale of 1-4 (1=disagreeing strongly and 4=agreeing strongly). The questionnaire

was completed by the nurse who had just received a change of shift report.

Patient Satisfaction Questionnaire

The investigator-developed patient satisfaction questionnaire was adapted from

items used in similar studies completed by Ammentorp, et al., (2009) and Halcomb, et al.

(2011). This questionnaire was comprised of five questions that asked the respondents to

rate their perceptions of nurse communication regarding the care each had received the

hospital stay. The questionnaire (see appendix C) uses a scale of 1-4, (1=disagreeing strongly and 4=agreeing strongly). The questionnaire was completed by the patient.

Change of Shift Report Audit Tool

This investigator-developed tool was comprised of two sections and used a yes/no format to identify whether or not information about the expected elements of change of shift report was communicated during report. In the first section, listed are the five areas of importance (two interpersonal, 3 technical), as defined by the 2008 Joint Commission Guidelines (AHRQ Publication No. 08-0043, April 2008).   In the second section, the tool includes 58 technical elements identified by Caruso (2007) and Wilson (2007) as relevant and useful to the nurse assuming the care of the patient (see Appendix A). The tool was completed by the investigator who observed the change of shift report. Additionally, the observer collected information about the particular episode of report (date, length of report session, number of patients being reported on, number of nurses participating in report).

Administrator Interview Tool

An investigator-developed interview guide was used to gather information about the structure aspects and outcomes of change of shift report. The tool was used to elicit information about the methods currently in place to support the process of change of shift report, policies and procedures to guide this process, and training provided to ensure the quality of change of shift report. Additionally, the tool included items that were intended

to initiate a discussion about the outcomes that are affected by the change of shift report, such as: patient safety, nurse satisfaction, and patient satisfaction (see Appendix D).

Data Analysis

Responses to interview questions were documented by the investigator in a field log. Data collected from change of shift report observations, nurse satisfaction questionnaires, and patient satisfaction questionnaires were entered into Excel files. Entered data was cleaned and examined for missing values. Missing values were not included in the analysis. Descriptive statistics were used to explore continuous data which was summarized using means and standard deviation. Frequency and percentages were used to report categorical data. Responses to the interview questions were analyzed as qualitative data. Themes arising from the qualitative data were also identified.

RESULTS

This study utilized a descriptive cross-sectional design in a convenience sample of administrators, nurses, and patients to examine the quality of change of shift report and identify gaps that could be addressed through an improvement process. This chapter describes the results of the study and is organized by describing the structure, process, and outcomes of change of shift report that were examined by interviewing the administrators about the policies and procedures that govern change of shift report. The process of report was examined by observing the current change of shift report practice to assess the structure of report and compliance with best practice. The outcomes of report were examined by interviewing administrators about the relationship between report and health-related outcomes in addition to determining nurse and patient satisfaction with change of shift report.

Structure

Information about the structure of change of shift report was obtained from investigator observations and administrative interviews.

System Characteristics

The acute care unit which was the focus of this project has twenty-five beds and a staff of approximately twenty-six registered nurses. There are 14 full time, 7 part time, and 4 per diem nurses on staff as of December 1, 2011. At the time of the study there were 13 Associate Degree prepared nurses, 12 Bachelor's prepared nurses, and no

master's prepared nurses. The maximum nurse:patient ratio was 1:6, with 2 nurses

usually scheduled for each 12 hour shift (staffing adjusts based on patient census).

Currently, there is no formal policy and procedure in place to govern how report

is given, received, or taught to new nurses. There is no formal orientation to the practice

of change of shift report, although two administrators referred to report being part of the

orientation process. One administrator said that report was addressed every year at the

annual skills lab.

The physical equipment provided by the facility and available for use include a

separate room with closeable door, a table that seats 6, a couch that seats 2, a portable

tape recorder, and speakers that the tape recorder can be plugged into to enhance sound

for the listeners. The room provided is approximately 75 feet away from the nurse's

station and 25 feet from the nearest patient room. There is also a phone available in the

room.

Provider Characteristics

According to the results from the Staff Nurse Post-Taped Report Questionnaire,

the nurses rated items that revealed provider characteristics as follows: few nurses agreed

that they had personal experience with the incidence of a poor patient outcome related to

incomplete shift report ($M = 1.9/4.0$, $SD = 0.83$); nurses tended to agree that the nurses on

staff provide a complete and accurate shift report ($M = 2.8$, $SD = 0.43$); nurses disagreed

somewhat with the statement that he/she was familiar with The Joint Commission's

guidelines ($M = 2.6$, SD 1.09). Table 1 displays the mean scores from the Staff Nurse

Post-Taped Report.

Table 1. Staff Nurse Perceptions of Report (*n*=27)

Staff Nurse Post-Taped Report Questionnaire		
Question Asked	Average Score	Std Dev
1. I believe the shift report I received prepared me to give prompt patient care	3.6	0.43
2. I am satisfied with the current method of taped report	3.7	0.00
3. I have had a personal incidence of a poor patient outcome RT incomplete shift report	1.9	0.83
4. I believe all nurses on staff provide a complete and accurate shift report.	2.8	0.43
5. I am familiar with the Joint Commission's guidelines for giving an adequate change of shift report	2.6	1.09
6. I believe this shift report session served to "debrief" me after a stressful shift	2.8	0.50
7. I believe the information I received on the patient's status was up-to-date	3.6	0.00
Scale Used: 1-disagree strongly; 2-disagree somewhat; 3-agree somewhat; 4-agree strongly		

Patient Characteristics

The daily patient census ranges from 4 to 13 patients and average patient stay is

2.5 days. (S. Wilber, personal communication, September 11, 2011)

Process

Information about the process of change of shift report was gathered by observing the actual process over an 8 day period and documenting compliance with elements of best practice as defined by The Joint Commission using the Change of Shift Report Audit Tool.

The current practice occurs as follows: nurses walk into a separate break room that also serves as report room. The tape recorder used by the off-going shift to record individual patient reports is either brought into the room from the nurse's desk by an arbitrary nurse, or left in the break room by the off-going nurses after they have finished taping report. In the morning, the nurse manager brings down the 24 hour patient summaries and places them on the table. In the evening, the 24 hour patient summaries are left at the nurse's station to be picked up by the nurse who has been assigned those patients. The nurses have also received a "cheat sheet" that is generated by the unit clerk that contains limited patient data (name, room, medical diagnoses, physician, etc). The nurses bring this "cheat sheet" into the room with them. The nurses sit down at the table and chairs. In the morning report the acute care nurse manager also listens to report. One nurse turns on the tape recorder. The nurses listen to the individual patient reports on the tape recorder. Report ends after the last patient report has been listened to. The nurses leave the report room.

Report occurs at 0700 and 1900 every day. The facility allots 30 minutes for report to occur.

The data collected during the episodes of change of shift report (n=15) are displayed in Tables 2-5. The data is divided into two areas: 1) the 58 technical items identified as what best practice has determined to be the report items that items should be included in each change of shift report and 2) the 5 areas (technical and interpersonal) that the Joint Commission recommends be addressed for how change of shift report should be structured.

It is important to note that of the 58 technical items, only 1 item (patient name) was reported 100% of the time (Table 2). 5 more items were reported at least 80% of the time (Table 3).

Table 2. Change of Shift Report Audit Results, all Categories (*n*=98)

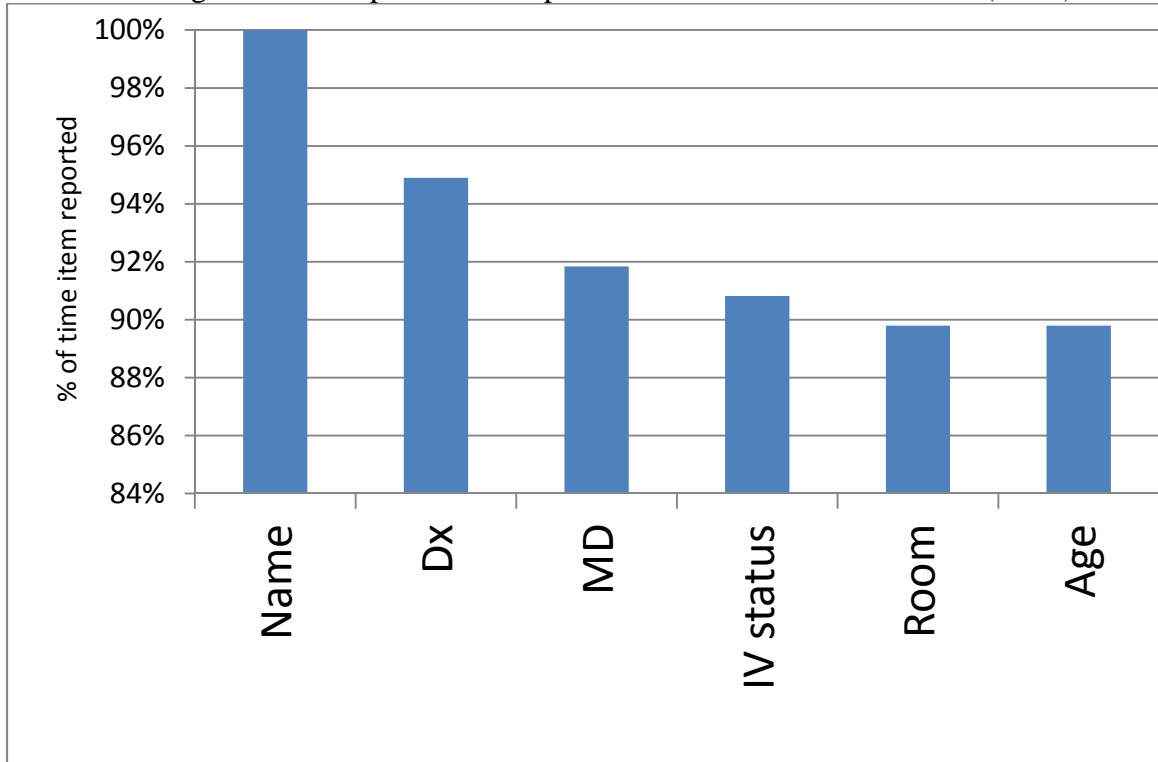| Category	% time reported	
NAME	100.0	████████████████████████████████
DX	94.9	██████████████████████████████
MD	91.8	█████████████████████████████
IV Status	90.8	█████████████████████████████
Room	89.8	████████████████████████████
AGE	89.8	████████████████████████████
Activity	71.4	██████████████████████
MEDS	65.3	████████████████████
O2/IS	62.2	███████████████████
PAIN	59.2	██████████████████
Procedures	54.1	█████████████████
Neuro	42.9	█████████████
UO	40.8	█████████████
Signif Med Hx	39.8	████████████
VS	39.8	████████████
DIET	35.7	███████████
#Assist	34.7	███████████
GI	30.6	█████████
SKIN	27.6	█████████
RESP	25.5	████████
Labs (unspecified)	22.4	███████
Last BM	21.4	███████
Foley	18.4	██████
Discharge	17.3	█████
GU	16.3	█████
New Orders	16.3	█████
Edema	13.3	████
Glucometer	12.2	████
TESTS	11.2	███
Changes	11.2	███
Code Status	9.2	███
Shower	9.2	███
CPM	9.2	███
Dressing	9.2	███
Social	9.2	███
Cardiac	6.1	██
Daily Wt	5.1	█
NG	5.1	█
Hct	4.1	█
Hgb	4.1	█
Attends	3.1	█
Na	3.1	█
CR	2.0	█
Allergies	1.0	█
TELE	1.0	█
BUN	1.0	█
WBC	1.0	█
Admit date	0.0	
Precautions	0.0	
BATH	0.0	
Pulses	0.0	
JP	0.0	
DRAIN	0.0	
K	0.0	
Cl	0.0	
PT	0.0	
INR	0.0	
PTT	0.0	

Table 3. Change of Shift Report Items Reported more than 80% of the time (*n=98)*

Table 4 displays the items that were reported less than 10% of the time. It is surprising to see that code status and allergy status are included in this group.

Table 4. Change of Shift Items Reported on less than 10% of the time (*n=98)*
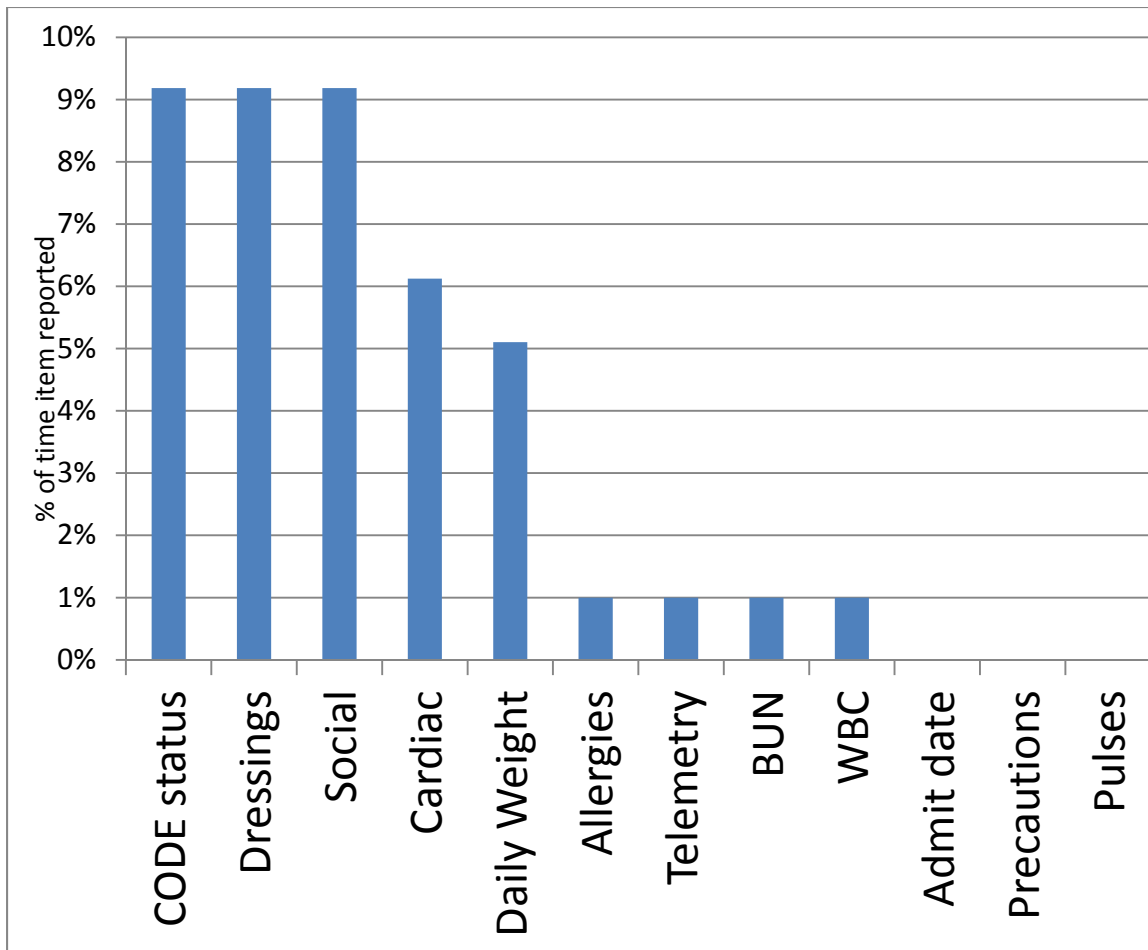

Results for the interpersonal and technical Joint Commission Recommendations

that were included in the change of shift audit tool were also quite revealing (Table 5).

Interpersonally, with regards to Item #1, interactive communication allowing for the

opportunity for questioning between the giver and receiver of patient information was not

observed in any of the episodes of taped report. Additionally there were no observed

incidences that allowed for verification of the received information including repeat-back

or read-back as appropriate (Item #3). Anecdotally, it was observed by the investigator

that any updates on patient status were conveyed to the on-coming nurse by the off-going nurse verbally at the nurse's station after the end of taped report. However, this behavior was not studied for content, frequency, or consistency during the course of this project.

Technically, up-to-date information regarding the patient's care, treatment and services, condition, and any recent anticipated changes was provided 100% of the time in the form of taped report given by the off-going RN (Item #2). It should be noted that this measure of the quality of the report is questionable since only 1 item (patient's name) of the 58 items reported earlier was reported on 100% of the time.

An opportunity for the receiver of the handoff information to review relevant patient historical data, which may include previous care, treatment, and services occurred 100% of the time (Item #4) It should be noted that this was done in the form of the unit clerk generated "cheat sheet" and electronic medical record generated 24 hour patient summary. As such, there are two problems that can arise: 1) there's no way to ascertain if the unit clerk-generated "cheat sheet" is accurate, and 2) it is unknown to what extent the nurses viewed the "cheat sheet" or 24 hour summary.

Lastly, there were no interruptions during the change of shift episodes observed (Item #5)

Table 5. Joint Commission Recommendations for Change of Shift Report (*n=98)*
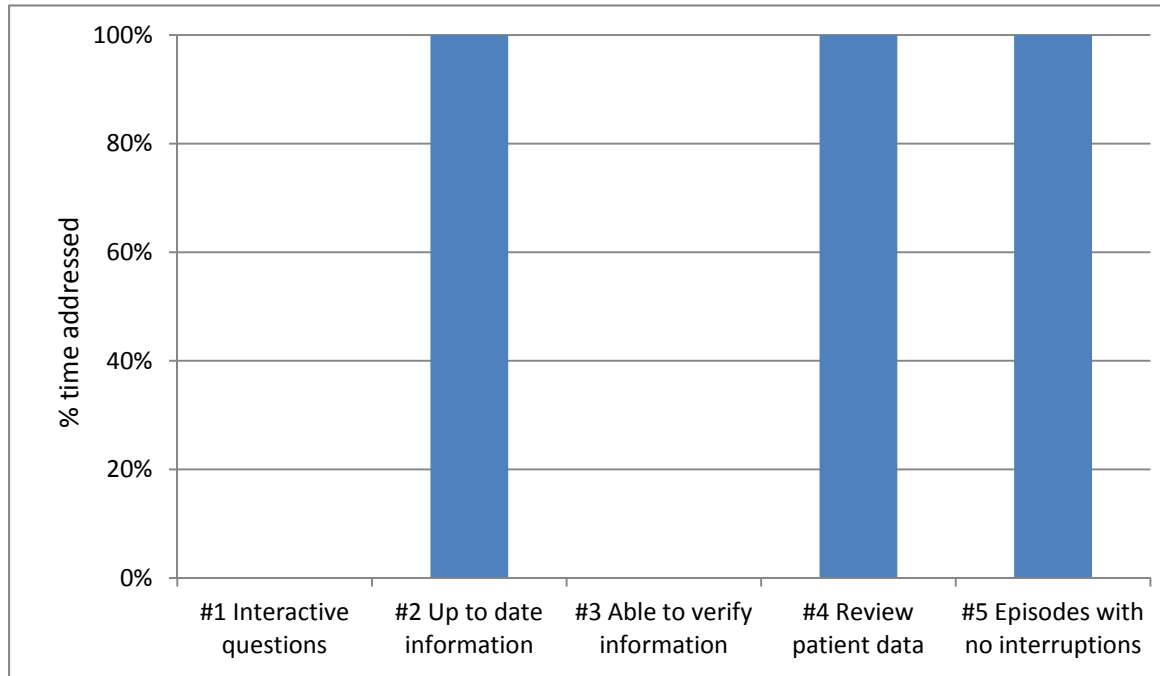
Outcomes

Data regarding the outcomes of change of shift report were collected from administrators, nurses, and patients. The administrators who were interviewed all agreed that the quality of shift report impacts patient safety.   Nurses that receive a quality change of shift report will be better prepared and able to plan care, leading to improved nurse satisfaction. On administrator commented that if nurses don't receive a large amount of extraneous and unrelated information, they won't be annoyed or irritated, which will also lead to improved nurse satisfaction. The administrators all expressed doubt that a patient would be aware that an unsatisfactory change of shift report (and any delays or problems stemming from the report) had occurred. One administrator

additionally noted that sometimes patients might get annoyed if they had explained

information to one nurse and the information didn't get repeated to nurses on subsequent

shifts.

On average, nurses gave a score of 3.5 or higher in the following categories that

apply to change of shift report: 1) believing the shift report prepared him/her to give

prompt patient care, 2) satisfaction with the current method of taped report, and 3) belief

that the information received during that episode of report was up-to-date. Perceptions of

the quality of report were less in the remaining areas. It is also notable that nurses tended

to disagree with the statement that they had personally experienced the incidence of a

poor patient outcome related to incomplete shift report. The results of the Staff Nurse

Post-Taped Report Questionnaire contradict the findings of the Change of Shift Report

Audit in which only 1 category was reported on 100% of the time, demonstrating that the

report received was not complete.

There was also a discrepancy between what was observed (no interaction between

the off-going and on-coming nurse during the taped report process) and what was

reported. Nurses reported being very satisfied with the method of taped report, a process

that does not allow for personal interaction between shifts ($M = 3.7/4.0$, $SD = 0.0$)(see

Table 1).

As the administrators noted, patient satisfaction can also be affected by change of

shift report. Of the nine patients who met the criteria to answer the patient survey during

the data collection period, four returned questionnaires. It is interesting to note that all of

the patients who participated in the study rated their satisfaction with nurse

communication in all categories. This directly conflicts with the data in Table 2 that
shows the report observed did not meet the recommended criteria for good
communication between shifts, suggesting that there is not a strong connection between
the quality of shift report and these particular patient satisfaction items.

Table 6. Patient Satisfaction with Care (n=4)

Patient Satisfaction Questionnaire		
Question Asked	Average Score	Std Dev
1. The staff nurse gave me useful advice.	3.8	0.43
2. The staff nurse was very thorough.	4.0	0.00
3. The staff nurse explained everything clearly.	3.8	0.43
4. The staff nurse encouraged me to ask questions.	3.5	0.50
5. The staff nurse helped me understand what the MD said.	3.5	0.50
Scale Used: 1-disagree strongly; 2-disagree somewhat; 3-agree somewhat; 4-agree strongly		

DISCUSSION

This study of change of shift report has revealed several important findings that can inform the development of improvements: 1) The quality of communication during change of shift report observed in this study was not consistent with the Joint Commission's recommendations or best practice as cited in the literature; 2) There is a discrepancy between the nurse's perception of quality of report received and the observed report; 3) There is room for improvement in the structure and process of report in this facility that supports the adoption of best practice by the nursing staff; 4) The assumed relationship between patient satisfaction and change of shift report was not supported in this study.

The Quality of Communication

The quality of communication during change of shift report observed in this study was not consistent with The Joint Commission's recommendations or best practice as cited in the literature. This is an important finding because the quality of communication during change of shift report is assumed to influence patient outcomes. Recommendations by The Joint Commission are to implement a procedure that strives to improve handoff communication. Strategies to achieve this include using clear language and avoid using ambiguous abbreviations, limit interruptions, implement read-back or check-back techniques between nurses, standardize reporting between shift to shift and unit to unit, and use technology to enhance communication (AHRQ Publication No. 08-0043, April 2008).

The literature review revealed that not only does shift report need to include the communication goals set forth by the Joint Commission, but it also needs to fulfill the overt, covert, ritual, and supportive other functions in order to be maximally beneficial to both nurses and patients. Additionally, it needs address the IOM goals of being safe, time efficient, patient centered, and provide for patient confidentiality. The data to be observed were chosen with these goals in mind. A shift report that met the guidelines put forth by The Joint Commission and maximized the quality of communication would have resulted in every data point being addressed during each episode of report (100%).

The data collected from this study fell surprisingly short of this expectation and suggests that the staff on the acute care unit of this facility is not receiving adequate information during the report sessions to enhance safety and reduce the risk of communication errors. The tool used in this study included the 58 elements identified by Caruso (2007) and Wilson (2007) as being relevant and useful to the nurse assuming the care of patients. For maximum communication between shifts, ideally all categories would be reported on for each patient during report. Of note in this study, only 6 report items areas were reported on greater than 80% of the time. Twelve report items were mentioned less than 10% of the time, significantly Code status (9%) and Allergy status (1%).

Among other items, the Joint Commission recommends up-to-date information be provided regarding the patient's care, treatment and service as well as an opportunity for the receiver of change of shift information to review relevant patient historical data such as care, treatment, services, etc. (AHRQ, 2008) . The Joint Commission does not specify

how this is to be done, but leaves it up to the facilities to determine the best method that

works for them. At the facility in this study, this up-to-date information is provided in

the form of 24 hour patient summary print-outs (generated by the electronic medical

record system prior to each shift shift). The summaries are then placed in the report room

immediately prior to the start of change of shift report. The data showed that these

summaries were provided at 100% of the shift reports. It is important to note that though

the 24 hour patient summaries are made available, this doesn't mean that each nurse

reads them or fully utilizes them when planning patient care. Further research is

necessary to assess study on how well these 24 hour summaries are being utilized by the

acute care nurses and fulfill the Joint Commission's recommendation.

<u>Discrepancies Between Observed and Perceived Quality of Report</u>

There is a discrepancy between the nurse's perception of the quality of report

received and the observed report. The nurse satisfaction questionnaire showed that the

acute care nurses believe the shift report received prepared them to give prompt patient

care, they are satisfied with the current method of taped report, and that they believed the

information received during report was up-to-date. This contradicts the findings of the

change of shift report audit that only 6 report items were reported on more than 80% of

the time.

The importance of this finding illustrates that if the nurse does not know that there

is a problem with report, he or she will not change how they give and receive report and

communications problems will continue to occur. Clinically, continued communication problems may result in errors, leading to poor patient outcomes.

Bridging this gap can be very complicated. According to Lewin's change theory, the place to start the change process is in the unfreezing stage. During this stage, those involved in the change process need to recognize that the current practice is not sufficiently meeting the best-practice standard (Borkowski, 2005). Ideally, the staff would use the data collected during the study and then identify that the best practice standards are not being met. The staff can then use this new found realization to start the process of exploring what methods are possible to improve the practice.

Need for Improvement

This study illustrates the need for an improved change of shift procedure that enhances communication between shifts and the need for educating the nurses on both the necessity of such a change and on how to use the new procedure correctly. Other studies have identified the importance of communication during change of shift report and provided outlines illustrating how other facilities have attempted to address the issue through standardizing change of shift report processes, supporting face to face interaction, and involving patients (Anderson & Mangino, 2006; Caruso, 2007; Dufault, 2010; Haig, et. al., 2006; Pothier, 2005; Scovell, 2010; Trossman, 2009; and Wilson, 2007). Although few studies have addressed the impact of improved change of shift communication on specific metrics such as patient safety and outcomes, Anderson & Mangino (2006) found that after implementation of a change of shift report designed

standardize the process and enhance communication, the facility involved saw financial

savings (a 100 hour decrease in overtime clocked by nurses in the first two weeks of

implementation), increased nursing staff satisfaction (nurses attributed this to being able

to visualize all patients within the first 30 minutes of the shift), and an unexpected

increase in physician satisfaction (physicians reported increase satisfaction nurse

preparedness and knowledge of patients), and increased scores on patient satisfaction

surveys.

It is recommended that this facility start this process by writing a formal change

of shift report policy and procedure, develop a tool that includes the 58 items

recommended by Caruso (2007) and Wilson (2007), train the staff on how to use the tool,

and monitor for compliance. Using a change of shift report tool that includes these 58

elements will also meet The Joint Commission's recommendation of standardizing report

between shifts, using clear language, and avoiding ambiguous abbreviations.

<u>Outcomes Measures</u>

It is assumed that effective change of shift report has a positive effect on patient

outcomes. However, in this study, the patient outcomes that were examined did not

reflect this relationship. The quality of communication at change of shift report was

judged to be in need of improvement, but the outcomes reported by patients (satisfaction

with advice from the nurse, explanations of care by the nurse, and help to understand

physician instructions) were not negatively affected by the change of shift report. The

relationship between other outcomes variables such as biological status, functional status,

and cost of care may be more sensitive to the quality of change of shift report than the measures of patient satisfaction that were used in this study. Additionally, it would be valuable to monitor the amount of information staff nurses relay and recall after attending a change of shift report session as an important outcome of change of shift report. Ideally, high quality change of shift report will lead to improved continuity of care for the patient, improved preparedness of the on-coming nurse so that he or she may better plan and execute patient care over the next shift, and a decrease in errors that originate from communication errors.

Limitations of this Study

There are several limitations that prevent generalization of these findings. Although there is no one rule regarding what number of subjects is required, samples that are too biased or too small may threaten the external validity of the overall design (Fain, 2009). The shortened data collection period resulted in a small sample size of nurses, administrators, and patients surveyed may have an impact on the results. The study design utilized a convenience sample of nurses, administrators, and patients at a small rural health care facility. According to Fain (2009), this may result in the uses of sample that does not represent the population as well as limits the ability to generalize the results. The cross-sectional design of the study may not accurately capture environmental or other events that occur over time. Data collection is often transitory in nature and using a cross-sectional design often makes causal association difficult (Houser, 2012). Limitations of the survey studies themselves can impact the results. Information obtained

via this method may be limited to standard responses; is limited by subject recall and

willingness to respond honestly; questions may be misinterpreted; and respondents may

respond with socially acceptable answers instead of honest responses (Houser, 2012).

The presence of the investigator while observing change of shift report may have

impacted the nurses' survey responses. Additionally, the inherently vulnerable position

that the patients are in may influence survey responses. Lastly, there is always the

potential for data collection and compilation errors. Study results will be questionable if

the data that is collected is not accurate and consistent (Houser, 2012).

<center>Clinical Implications</center>

Clinical implications of this study are directly linked to the need to improve the

quality of change of shift report. This will require changes in all three aspects of the

quality of report (structure, process, outcomes). It is important for the organization to

commit resources that will allow an improvement team that includes nurses and

administrators to plan, implement, evaluate, and act on these changes. Of paramount

importance is the need to be mindful of the challenges arising from the discrepancy

between the observed and perceived quality of change of shift report among nursing staff.

Careful planning that supports the unfreezing, changing, and refreezing stages of change

among the nurses is needed.

Clearly the nurse is the most important player in the change of shift report process

and needs to be involved in planning, implementing, and evaluating any changes in this

process. In general, change is difficult, and the evidence shows that changing a method

of change of shift report can be especially so (Caruso, 2007; Manning, 2006). Most

likely, unless there is acceptance for the need to change, the improvements will be

difficult to implement and painful for the nursing staff. If the nurses can appreciate how

a standardized change of shift report policy and procedure will greatly enhance

communication, better prepare them to provide patient care, and prevent harmful patient

errors, then the change process is more likely to succeed (Borkowski, 2005; Yoder-Wise,

2010). As noted in the literature review, the clinical nurse leader could play an important

role in facilitating this change process. This role was created to facilitate the lateral

integration policies and procedures, enhance nurse satisfaction, and improve patient

outcomes by examining evidence –based best practices and developing appropriate

improvement strategies (AACN, 2007).

Recommendations for Further Research

Recommendations for further research include further study of nurses'

knowledge, skills, and attitudes about communication during change of shift report. It is

important to assess all of these competencies in order to plan effective educational

strategies designed to change existing habits and skills in giving and receiving report. It

would also be beneficial to determine how nurses are currently being taught to give and

receive report, and whether or not this process is consistent with The Joint Commission

recommendations and standardized in all nursing curricula. More research exploring the

relationships between patient characteristics/outcomes and the quality of communication

during change of shift report is needed. Developing reliable and valid measures of

continuity of care would allow us to also examine more closely the impact of

communication on the overall quality of patient-centered care.

CONCLUSION

Communication lapses are identified by the Institute of Medicine and The Joint Commission as a major contributor of sentinel events and other mistakes that negatively impact patient outcomes. One commonly occurring type of communication that occurs in nursing is the change of shift report. Since some form of change of shift report occurs in virtually all nursing units, it stands to reason that striving to minimize the factors that contribute to miscommunication should be a priority for health care facilities. This study showed that although nurses reported high levels of satisfaction with the communication they believed to have received during change of shift report the data revealed there were significant gaps in information exchanged during report. The clinical microsystem assessment conducted in this study is an important first step to planning improvements to ensure high quality of communication at change of shift report.

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APPENDICES

APPENDIX A:

CHANGE OF SHIFT AUDIT TOOL

CENTRAL MONTANA MEDICAL CENTER - TAPED REPORT
DATE_____   REPORT START TIME_____   REPORT END TIME _____   Time RN sees Pt _____
Number of patients reported on_____   Number of RNs taping____listening_____

Parameter	YES	NO	*NOTES*
Allowed for the opportunity for questioning between the giver and receiver of patient information			
Up-to-date information regarding the patient's care, tx,services, condition, recent/anticipated changes (see tool below for details of this patient)			
A process for verification of the received information, including repeat-back, or read-back, as appropriate			
An opportunity for the receiver of the handoff information to review relevant patient historical data, which may include previous care, tx, services			
Interruptions during handoffs Number of interruptions during taping			

DEMOGRAPHIC DATA	KARDEX DATA	ASSESSMENT			PROCEDURES/ TREATMENTS	LABS		TIMED MEDS	
		AREA	REPORT RECEIVED	CURRENT RN ASSESSMENT					
RM from/date	ASSIST 1 2 L	NEURO			TX/ PROCEDURES	Gluc		07	19
NAME AGE	ACT	LUNGS HEART				Bun		08	20
MD	DLY WT					Cr		09	21
DX	DIET	EDEMA PULSES			O2/IS TELE	Na		10	22
CODE STATUS	VS	GI LAST BM			GLUC	K		11	23
ALLERGIES					IV	Cl		12	24
PRECAUTIONS		GU U.O.				WBC		13	01
	SHOWER BATH ATTENDS CPM				FOLEY NG	Hct		14	02
SIGNIFICANT MED HX		SKIN/D SSG PAIN			JP DRAINS	Hgb		15	03
						PT		16	04
		SOCIAL			CONDITION CHANGES/ NEW ORDERS	INR		17	05
		LABS/ TESTS D/C PLANS				PTT		18	06

HIGHLIGHT/CIRCLE WHEN ABOVE TOPIC IS COVERED
NOTES:

Change of Shift Report Guideline Adherence Tool adapted from the AHRQ Publication (No. 08-0043, April 2008) , Caruso (2007, p. 20) and Wilson, (2007, p. 202).

APPENDIX B:

STAFF NURSE POST-TAPED REPORT QUESTIONNAIRE

This questionnaire is part of a study being done by Sarah Smith, a graduate student at Montana State University – Bozeman. She is a registered nurse attempting to complete her master's project, with a focus on rural health care in Montana.

She's interested in hearing about your experience as a staff nurse at Central Montana Medical Center. The information and your responses contained in this questionnaire are completely anonymous and will not affect your relationship with the nurses, managers, or physicians at Central Montana Medical Center.

There are no benefits or risks associated with answering this questionnaire. If you do wish to participate in this study, please fill out the questions below and return to Sarah Smith after the change of report session.

Completing this form and returning to Sarah Smith implies consent.

Using the following scale, please rate your experience with the staff nurses at CMMC.
1 – disagree strongly
2 – disagree somewhat
3 – agree somewhat
4 – agree strongly

1.	I believe the shift report I received prepared me to give prompt patient care	1	2	3	4
2.	I am satisfied with the current method of taped report	1	2	3	4
3.	I have had a personal incidence of a poor patient outcome RT incomplete shift report	1	2	3	4
4.	I believe all nurses on staff provide a complete and accurate shift report.	1	2	3	4
5.	I am familiar with the Joint Commission's guidelines for giving an adequate change of shift report	1	2	3	4
6.	I believe this shift report session served to "debrief" me after a stressful shift	1	2	3	4
7.	I believe the information I received on the patient's status was up-to-date	1	2	3	4

Adapted from Ammentorp, et al., (2009, p. 512) and Halcomb, et al. (2011, p. 324)

APPENDIX C:

PATIENT SATISFACTION QUESTIONNAIRE

This questionnaire is part of a study being done by Sarah Smith, a graduate student at Montana State University – Bozeman. She is a rural registered nurse attempting to complete her master's project, with a focus on rural health care in Montana.

She's interested in hearing about your experience at Central Montana Medical Center. The information and your responses contained in this questionnaire are completely anonymous and will not affect your relationship with the nurses, managers, or physicians at Central Montana Medical Center.

There are no benefits or risks associated with answering this questionnaire. If you do wish to participate in this study, please fill out the questions below and return to your nurse.

Completing this form and returning to your nurse implies consent.

Patient Perceptions of Communication/Care Inclusion Questionnaire
Using the following scale, please rate your experience with the staff nurses at CMMC.
1 – disagree strongly
2 – disagree somewhat
3 – agree somewhat
4– agree strongly

0 – do not know, have not had experience with the question topic.

1.	The staff nurse gave me useful advice.	1	2	3	4		0 (don't know)
2.	The staff nurse was very thorough.	1	2	3	4		0 (don't know)
3.	The staff nurse explained everything clearly.	1	2	3	4		0 (don't know)
4.	The staff nurse encouraged me to ask questions.	1	2	3	4		0 (don't know)
5.	The staff nurse helped me understand what the MD said.	1	2	3	4		0 (don't know)

Adapted from Ammentorp, et al., (2009, p. 512) and Halcomb, et al. (2011, p. 324)

APPENDIX D:

ADMINISTRATOR INTERVIEW TOOL

Interviews will be 15 minutes in duration. Each administrator will be interviewed one time.

Questions:

1. What is the current method of change of shift report on the CMMC Acute Care Unit?
2. What information is currently required to be included in each change of shift report?
3. Is there a policy and procedure in place describing how the current method of change of shift report should proceed?
4. How are the staff nurses trained with regards to performing change of shift report?
5. How does your facility currently measure whether or not a change of shift report has been properly performed?
6. What types of education are provided to nurses if an individual nurse is determined to be giving an inadequate change of shift report?
7. Do you think the quality of change of shift report impacts patient safety? If so, can you give specific examples or data that illustrate how change of shift has impacted patient safety?
8. Do you think the quality of change of shift report impacts nurse satisfaction? If so, how?
9. Do you think the quality of change of shift report impacts patient satisfaction? If so, how?