Implementation of an Electronic Medical Record (EMR) documentation system and Standardized Handoff protocol for Psychiatric inpatient admission process: Effect on nurses’ satisfaction and intra-professional nursing communication

                                         Maria Jensen

 Marina Cecere

                         The University of Alabama

 Capstone School of Nursing

Implementation of an Electronic Medical Record (EMR) documentation system and Standardized Handoff protocol for Psychiatric inpatient admission process: Effect on nurses’ satisfaction and intra-professional nursing communication.

Abstract

Nurses’ satisfaction and perception during the in-patient admitting process is not well understood. Improvements in intra-professional communication and documentation processes enhance nursing efficiency and increase patient safety. The purpose of this evidence-based practice (EBP) improvement project is to analyze nurses’ satisfaction and to evaluate the effect of intra-professional nursing communication in the emergency department and in the in-patient psychiatric unit during the psychiatric patients’ admission after the implementation of a new electronic medical record (EMR) documentation system. The information garnered will be translated in a three phase project and culminate in the development of a standardized mental health handoff protocol for the emergency room and inpatient psychiatric nurses. Two advanced practice nurses hypothesize that implementation of an EMR will improve communication and nurse satisfaction during ED to Psychiatric in-patient unit transfers. However, the handoff process will require standardization not addressed by the EMR.

Implementation of an Electronic Medical Record (EMR) documentation system for Psychiatric in-patient admission process: Effect on nurses’ satisfaction and intra-professional nursing communication.

**Introduction**

 Nearly one-fourth of all adult stays in U.S. community hospitals involve depressive, bipolar, schizophrenia, and other mental health disorders or substance use-related disorders (Agency for Healthcare and Research Quality (AHRQ, 2004). Reduced availability of public mental health and substance abuse services has contributed to an increase in patients with psychiatric conditions presenting to emergency departments (EDs). Most patients with psychiatric emergencies require admission to an inpatient psychiatric facility; however, due to a shortage of capacity, most patients must wait in the ED for hours until a bed becomes available. The increase in psychiatric “boarders” in the ED has negative repercussions for ED staff and for patients with psychiatric and non-psychiatric emergencies.

 Between 1996 and 2006, the annual number of ED visits in the United States increased from 90.3 million to 119.2 million. However, the number of U.S. hospitals operating EDs fell from 5,000 in 1991 to less than 4,000 in 2006 (Cantor, 2009). As a result, ED overcrowding has become quite common (Cantor, 2009). In hospitals with more than 300 beds, 90 percent of EDs have reported consistently functioning at or above capacity (Burley, 2007). ED admission delays have many negative consequences including increasing hospital length of stay (LOS), adverse events, errors, mortality rates (Liew, 2003, Richardson, 2006, Liu, 2009), and diversion of ambulances to other EDs (which delays care for those patients and represents a revenue loss for the diverting hospitals). According to the Joint Commission Accreditation of Healthcare Organizations (JCAHO, 2008), half of all sentinel events occur in the ED, with roughly one-third of these being due to overcrowding. The issue of handoffs has become so prominent that the same agency had introduced a national patient safety goal on handoffs that become effective in January 2006 (Haig, 2006). The hazard that incorrect “handoffs” pose to patient safety and the delivery of quality health care cannot be ignored. Ineffective handoffs can lead to patient safety problems. Research and development of strategies to reduce these problems are required (Bomba, 2005).

 Traditionally, the medical workup of a patient seen in the emergency department includes a history and physical but lacks a mental status examination after the physical exam in order for appropriate testing and treatment to be formulated. However, it is not always feasible to conduct mental status exams in the emergency department due to the nature of the setting but some type of behavioral and cognitive assessment is warranted for effective management of these patients. Although many different short tests of mental status exist, only one has been studied in emergency medicine by Kaufman and Zun (1995).

Lack of a standardized methodology to assess mental status negatively impacts intra-professional and inter-professional communication and challenges efficient patient transfer from the emergency department to psychiatric units. A standardized protocol for the rapid and comprehensive evaluation of patients with psychiatric symptoms would benefit patients, health care professionals and health care systems alike. The Joint Commission’s national Patient Safety Goal 2 added a new requirement on January 1, 2006 that seeks to improve the effectiveness of caregiver communication (Joint Commission on Accreditation of Healthcare organizations, 2005).

 The Situation Background Assessment Recommendation (SBAR) communication as part of a structured hand-off report has been found to improve patient safety in health care environments (Fay-Hiller, Regan & Gallagher, 2012). A standardized communication format, such as a modified SBAR, would be utilized as a situational briefing guide for staff and caregiver communication regarding the transfer process from the emergency department to the in-patient psychiatric unit. SBAR has been utilized in the Institute for Healthcare Improvement (IHI) collaborative and has been endorsed by the American College of Healthcare Executives and the American organization of Nurse Executives (Institute for Healthcare Improvement 2011).

With the onset of the Affordable care Act (ACA) and insuring an additional 32 million Americans, health care redundancy and wasted expenditures must be identified and reduced. In this environment the ability to communicate effectively concerning patient care is more important than ever. Nurses have traditionally been the collectors, reviewers, and users of patient information. Quality nursing care is dependent upon the reliability of the information gathered and accurately documented. Nursing report has been essential to the exchange and transfer of patient information from nursing shift to nursing shift in coordinating 24 hour patient care and is an important nursing function and a significant nursing activity.

             The safety and quality of patient care represent central issues in the U.S health system. It is estimated that between 44,000 and 98,000 Americans die in hospitals each year as a result of medical errors with an associated cost of approximately $37.0 billion (Kohn, 2000).  EMR has the potential to improve efficiency, patient safety, and quality of care with a resultant reduction in health care cost through better intra-professional communication that benefits patients, hospital systems and enhances nursing satisfaction (Wang.et. al., 2003).

***Aim***

 The aim of this evidence based practice project is to create a TRIP (Translating Research into Practice) initiative with the results of questionnaire studies investigating nurses’ satisfaction and intra-professional nursing communication at handoff between ED staff and in-patient Psychiatric unit staff post implementation of an electronic medical record (EMR).

***Clinical Problem:***

Mental health and substance abuse disorders have a substantial economic burden on U.S. community hospitals. AHRQ (2004) reported a record 1.9 million of the 7.6 million stays in community hospitals were for patients hospitalized primarily because of a mental health or substance abuse problem. In the other 5.7 million stays, patients were admitted for conditions but were also diagnosed as having a mental health or substance abuse disorder. Nearly two-thirds of costs were billed to the government Medicare and Medicaid programs. All of the nearly eight million admissions were first triaged through the community hospital ED. Increased length of stay (LOS) in the ED has been linked to decreased nurse satisfaction and frustration potentially compromising communication at handoff. This proposal will attempt to answer the following clinical problems:

Decreased nurse satisfaction caused by:

* Poor clinical information transmitted from discharging nurses in the ED to the admitting nurses in the in-patient psychiatric unit.
* Delay in the discharge/admitting process from the ED to the in-patient psychiatric unit creating overcrowded ED.
* Increased errors in psychiatric orders caused by increased ED LOS.

Impaired Intra-professional communication caused by:

* Nursing dissatisfaction associated with poor inter-departmental communication.
* Difficulty obtaining patients’ clinical information which may decrease the quality of care to the patient.
* Missed or misinterpreted patient information leading to dangerous errors.

  Since 1999, AHRQ (then the Agency for Health Care Policy and Research) published its first TRIP initiative. The purpose of TRIP was to generate new knowledge about approaches that promote the utilization of rigorously derived evidence to improve patient care (AHRQ, 2004). Current TRIP initiatives focus on reducing health disparities and use of information technology. This proposal focuses on eliminating disparities in psychiatric populations utilizing the EMR and augmenting its use through the development of a standardized handoff.

***Hypothesis***

            In an urban community hospital the use of EMR and technology will improve nursing satisfaction and intra-professional communication 30 days post use among psychiatric patients transferred from ED to the in-patient psychiatric floor. The EMR will promote improvements in efficiency through reductions in redundant medical services and an improvement in the quality of communication of patient information while reducing errors. We further hypothesize that nursing handoffs will not immediately improve with the use of an EMR.

**Review of Literature**

           The National Alliance of Health Information Technology (NAHIT) defines an electronic medical record as “an electronic record of health-related information on an individual that can be created, gathered, managed, and consul ted by authorized clinicians and staff within one health care organization” (Thede, 2008). An EMR emulates a traditional patient chart and contains all of the expected information such as lists of patient problems, history and physical information, medications, allergies, as well as health maintenance data, progress notes, various test results, and ordering functions (Bates, 2003).

Electronic Medical Records – A Historical Perspective

 Electronic Medical Records were initially conceived, developed and funded by independent entities seeking to institute paperless work environments. These systems were created, serviced and maintained internally by their own IT personnel. One of the first known organizations to develop and use an EMR was the Department of Family Medicine at the University of South Carolina in 1975 and a consisted of a series of mini-computers managed by on-site programmers (Bennett, & Steen, 2010).

Independent computer software development companies recognized the increased interest in EMR systems and began to market proprietary software programs in the 1990s. Financial considerations determined that it was more economical to contract with an outside computer software company rather than maintain a system internally. As health care organizations progress into the twenty-first century, the interest and implementation of EMRs has grown significantly (Carroll, Bradford, Foster, Cato, & Jones, 2007). The purported benefits of EMRs include increased patient safety by reducing medical errors, time efficiency, and decision support tools (Deese & Stein, 2004).

            According to Brailer (2005), electronic medical records gained national prominence with the creation of a National Coordinator of Health Information Technology position within the Department of Health and Human Services under President George W. Bush. Patient safety, cost reduction, and increased quality of patient care were the primary reasons for this initiative. EMR implementation under this program calls for widespread EMR adoptions, the ability of electronic health records to be shared easily between health care systems, and the creation of standards for national interoperability (Brailer, 2005).

           The Health Information Technology for Economic and Clinical Health Act (Section 3011, 4, USC---2009), part of the American Recovery and Reinvestment Act passed in February of 2009, includes over $20 billion dollars of federal funding for the development of health care information technology. Additionally, over $17.2 billion has been earmarked as incentives for providers to incorporate electronic health records, primarily through Medicare and Medicaid reimbursement (Health Information and Management Systems Society, 2009). Earlier studies, such as Newton (1995), demonstrated that it took more than a year after implementation for nurses’ negative attitudes towards the new computerized system shifted to positive attitudes while concurrently showing a significant improvement in the quality of care planning. However, the psychological impact of change on staffing should not be minimized. Change in the workplace creates stress, uncertainty, and role confusion (Schoolfield & Orduna, 1994).

 EMR implementation is a process that requires time, effort and ongoing attention but has demonstrated clinical benefits (Karnas & Robies, 2007) but requires change. Organizational transition to a new system is challenging and complicated (Schoolfield & Orduna, 1994). Nurse documentation, time management, patient care delivery, and work flow are all affected by instituting EMRs (Smith, 2004).  Research suggests that nurses spend 35 percent of nursing practice time on documentation and less than 20 percent of time on patient care activities (Headrick et al. 2012). Hollingworth et al. (2007) found that the use of EMRs when prescribing enhances safety and quality of care for the patient without disruption of clinical workflow. Computerization of data allows for greater and faster analysis of information especially for large groups over long periods of time (Tripp, Narus, Magil & Huff, 2008).

          Communication systems can be improved by systematically applying knowledge of our visual, auditory, and higher cognitive functions. These improvements rely upon an understanding of the characteristics and limitations of humans and to design devices, tools, work places and processes to address these shortcomings. The Joint Commission has consistently mentioned the need for improvements in the communication and handoff procedures of hospitals and clinics and has consistently reflected these issues in formal recommendations. Arora et al., (2006) recognized the need for improvement among physicians, nurses, and other clinical staff and used interviews and critical incident techniques to describe how communication failures can lead to patient harm after transfer of care within a hospital.

 The delivery of good nursing care has always been dependent upon the quality of the information available to the nurse and the nurses’ ability to communicate effectively to other clinical disciplines about patient care is more important than ever. Communication failures include issues such as insufficient information, faulty exchanges of existing information ambiguous and unclear information and lack of timely an effective exchanges of pertinent information (Leonard, M., Graham, S., & Bonacum, D. 2004). Reliable information is necessary for effective nursing practice, and has led to the investment of resources in the development of computerized nursing information systems (Urquhart, Currell, Grant & Hardiker 2009). Effective interaction between team members has been associated with greater efficiency and decreased workloads, improved clinical outcomes, reduced adverse drug events, reduced patient morbidity, improved job satisfaction and retention and improved patient satisfaction (Zwarenstein, M., Reeves, S., & Perrier, L. 2005). Regulatory guidelines seek to support quality by establishing financial penalties as incentives for compliance. Hospitals are not reimbursed for patient falls, medication errors, and postoperative complications (The Affordable Care Act. 2012). Intra-professional team learning to enhance teamwork and communication is increasingly recognized as a high priority for patient safety. Dahm & Wadensten (2008) found that standardized care plans in electronic health records increased nurses’ ability to provide care of high quality to their patients.

 Health information technology literature has shown many important quality and efficiency related benefits. Chaundry et al. (2006) found that EMR implementation was associated with higher levels of nurse staffing and lower patient mortality. Hayrinen, Saranto & Nykanen (2008) in a review of the research on electronic health record systems noted that many studies have examined the completeness and accuracy of documentation, while fewer studies have examined the use of information or the impact on communication amount nurses.

EMR & Nursing Handoffs

Nursing workflow innovation is key to reducing inefficiency in psychiatric admission processes. A majority of nurses prefer bedside documentation but noted that environmental and system barriers often prevent bedside EMR charting. “The safe, efficient, effective, patient-centered, equitable, and timely delivery of health care services requires tools that organize and display information which places patient data in context, synthesizes that information with available medical evidence, and supports the clinician’s decision-making process” (Armijo, McDonnell &Werner, 2009).

Overall, 75% of nurses thought EMR had improved the quality of documentation and 76% believe electronic charting would lead to improved safety and patient care (Moody, Slocumb, Berf & Jackson 2004). Kazley & Oscan (2008) identified a positive significant relationship between EMR use and 4 of 10 process quality indicators in national healthcare performance. The adoption of the EMR should improve the safety and quality of health care. The adoption of interoperable EMR systems could potentially reduce medical errors, improve health, and improve efficiency and networking eventually leading to major care savings of more than $81 billion annually (Hillestad et al., 2005). Paper charting is associated with poor coordination of care and cannot be easily assessed to routinely measure quality or reduce medical errors. The Institute of Medicine (2000) reported that safety and quality of patient care represents central issues in medicine in the U.S. It is estimated that 40,000 fatal events are attributed to medical error each year.

 The implementation of technological advances to redesign existing systems is a major step in providing quality care and evaluating cost effectiveness of treatments while establishing quality measures and standards. With the implementation of the Affordable Care Act, cost containment is paramount and therefore innovation to improve quality is essential to the viability of national insurance. Improvements in health care are slow in part because doctors and nurses lack skill in quality improvement, patient safety, and inter-professional teamwork (Headrick, et al., 2012). The Robert Wood Johnson Foundation funded the groundbreaking: *The future of nursing, Leading, change, advancing health.* (Shetz, A.H.2012). One of its priorities includes strengthening nursing education, advancing nursing use of health information technology and advocating intra-professional collaboration. However, nursing satisfaction is a key indicator that also impacts quality in hospitals. Dissatisfaction among nurses contribute to costly labor disputes, turnover, and risk to patients (McHugh, 2011).

Streamlining and standardizing collected information in the ED with innovative technology has been shown to decrease length of stay for psychiatric patients (IHI, 2011). The Medical Center and Spring Harbor Hospital streamlined the evaluation, transfer, and admission processes for psychiatric patients presenting to Maine Medical Center’s ED, with the goal of reducing waiting times before patients are admitted to the psychiatric facility (Robinson, 2011). They demonstrated through an interdisciplinary team effort that the ED length of stay for patients requiring psychiatric admission decreased from a peak of nearly 18 hours to just slightly over 6 hours in six months with a marked decrease in the number of patients per month whose LOS was greater than 12 hours. As LOS decreased the overall need for security staff also decreased and compliance with JCAHO standards for restraint and seclusion increased dramatically. All this occurred despite a 37 percent increase in the number of ED patients admitted for psychiatric care during the intervention period (Institute for Health Improvement [IHI], 2011aRobinson, 2011). Percent compliance with standards for nursing assessments and physician orders for patients were identified as a measure to improve LOS and transfers for psychiatric patients in the ED (IHI, 2011). Yet current literature reviews have not identified any research in this area.

A key process in compliance with physician orders is communication between ED and psychiatric nurses (Lui, 2009). Intra-professional communication suffers when satisfaction decreases. Therefore, an implementation project that targets satisfaction and nurse-nurse communication through an EMR designed to streamline psychiatric orders and transfer of emergency department (ED) patients requiring psychiatric admission is valuable to nursing research. The purpose of this project is to survey nurses perceptions of satisfaction and intra-professional communication thirty days after implementing an EMR.

Patient transfer from one care give to another is an area of high safety consequences as is evidenced by many studies and the JACHO’s patient safety Goals (Shendell, Feinston & Mohr, 2007). Time constraints require nurses to share essential information quickly but nurses self-report that the information they provide and receive when a patient is transferred is highly variable from nurse to nurse (Hardely, Payne & Coleman, 2000). A review of reports from JACHO shows that communication failures were implicated at the root of over 70 percent of sentinel events for hospitals and clinics to improve care. Nursing review of orders is still a critical component in the prevention of medication errors and patient safety. Harshberg et al; (2011) determined that using electronic medical records (EMR) and computerized physician order entry (CPOE) systems improves completeness of medical record documentation and improved patients workflow, patient satisfaction and user satisfaction with the medical record system. The growing body of literature on safety and error prevention reveals that ineffective or insufficient communication among team members is a significant contributing factor to adverse events. In the acute care setting, communication failures lead to increases in patient harm, length of stay, and resource use, as well as more intense caregiver dissatisfaction and more rapid turnover (Smetzer & Cohn, 2005). Because ineffective communication among health care team members contributes to patient harm and adverse events, interventions and implementation methods become instrumental in preventing negative patient outcomes (Dingley, Daughrty, Deroeg & Persing, 2008).

In the immediate time period of EMR implementation, intra- professional communication cannot be expected to immediately improve. Chaudry et al. (2006) found that EMR implementation was associated with higher hospital costs and length of stay (LOS), higher levels of nurse staffing, higher complications and lower mortality for conditions. Intra-professional communication occurs traditionally during the nursing handoff process. The nursing handoff is a system for communicating information which can facilitate patient care processes and is accepted as an essential aspect of nursing practice (McCloughen, O’Brien, Gilles & McMurray; 2008). In psychiatry there is little reference as to what constitutes relevant information for handoff. The development of a formal guideline to improve handoff quality and content and overcome issues of inconsistency and poor quality has been recommended (Aurora & Johnson, 2006; McCloughen et al., 2008; Sexton et al., 2004). Consequently, there is a need for an innovative standardized nursing handoff along with EMR to facilitate intra-professional communication.

Method

This is a quantitative and qualitative implementation project that will study and measure nurses’ satisfaction and intra-professional communication with the patient admission process from the E.D to the in-patient psychiatric unit utilizing the EMR documentation. The project will be utilized to translate this information into an initiative that implements a standardized nursing handoff protocol.

Setting- This study will be performed in a Long Island community hospital with 356 beds. Survey data for the last year available shows that 42,850 patients’ visited the hospital’s emergency room. The hospital has a total of 13,280 admissions (American Hospital Association, 2011).

Participants- All nursing staff employed in the ED and Psychiatric inpatient department will be invited to participate in the study. The study will be conducted in four phases. Nurses from different shifts in both departments will be provided with questionnaires 30 days after the implementation of the EMR. Their participation will be voluntary and anonymous with responses returned directly to the investigator. Descriptive and comparative analysis using a post-test statistic will be performed on the two groups of participants in phase I and upon completion of the project.

 The purpose of the Phase I quantitative component is to identify the perception of nurses at the E.D and the in-patient psychiatric unit regarding satisfaction and intra-professional communication. This study will determine what, if any, difference exists between admissions processes from the E.D to the in-patient psychiatric unit utilizing a new implemented EMR documentation process. A 44 item Questionnaire using a 5 point Likert scale instrument was constructed (T able 1). The survey utilized is the Electronic Health Records Documentation in Nursing: Nurses’ Perceptions, Attitudes, and Preferences (Moody 2004). Otieno (2007) was particularly useful in formulating the initial items of quality and user satisfaction with EMR and was utilized as a basis for our questionnaire development. We selected the Otieno (2007) questionnaire for this project rather than Moody (2004) due to the highly reliable Cronbach’s alpha coefficient ≥ 0.70 score. The survey will be conducted 30 days after implementation of the EMR. Nurses from different shifts in both departments will be provided with the questionnaires. Their participation will be voluntary, anonymous and returned directly to the investigator or to a nominated person. Descriptive and comparative analysis using a post- test statistic will be performed on the two groups of participants.

 An instrument that is valid in content must draw representative questions from a universal pool (Davison, 1997). As discussed above, several sources of information were employed during the instrument development, including the instruments developed by other researchers (Fung et al, 2004). A research framework was developed from relevant literature (Delone &McLean 2002) but independent of earlier instruments. The instrument was reviewed by a doctoral prepared advance nursing expert to provide evidence for the face content validity of the instrument. Otieno et al (2007) survey in a study of 166 nurses was highly reliable with a Cronbach’s alpha coefficient ≥ 0.70. Construct validity was examined through factor analysis and correlation analyses. In a study of 100 nurses, Moody (2004) also demonstrated great internal consistency with a Cronbach alpha coefficient r=0.77. The researchers will ask the nurses an additional single question in the survey for an additional analysis with a recorded 5 point Likert scale. The question will ask; how satisfied were you with the interaction/communication with your fellow nurse? The 5 point Likert scale answer will be recorded as: 1- never/almost never; 2-seldom; 3- about half of the time; 4- most of the time; 5- always/almost always. It is equally expected that the single addition will reliably indicate nursing satisfaction with the handoff process.

Descriptive statistics will be done to analyze all items on the questionnaire. All data analyses will be done with the statistical software program, SPSS version 2.0 (SPSS software, IBM). An independent *t* test will be performed to analyze post statistical differences between the perceptions of the E.D. and in-patient psychiatric nurses. Bivariate correlations will be used to examine the relationship of perception toward the EMR and intra-professional communication and staff satisfaction.

Dissemination & Inquiry: Phase II

 The results of Phase I will be disseminated to the nurses in the ED and In-patient psychiatry units. A focus group will be conducted with the nursing staff of both units to ascertain what they consider would aid best practices in handoff of mental health patients in addition to the EMR. An appreciative inquiry is an alternative to the traditional problem based framework organizational change. It seeks to focus attention on positive aspects of the organizational system rather than deficits (Barrett & Fry, 2002). This framework will be utilized in the focus groups with nurses to analyze if the EMR is helpful in the transfer of patients from the E.D. to the in-patient psychiatric unit. The information obtained will be used to identify areas in which a desired collective vision can be formulated for EMR and handoff protocol improvement. In preparation for this project the work flow process of psychiatric patients was reviewed. ER physicians and nurses identified that EMR is not utilized for nursing assessment of mental status (personal communication, ED physician) and therefore has not been a factor in satisfaction or intra-communication between E.D. and in-patient psychiatric personnel to date.

Implementation: Phase III

Project team: Two Doctor in Nursing Practice (DNP) students are registered nurses with 30 years combined of psychiatric and public health nursing experience will be the evidenced based project team.

 Methodology: Although nurses require a verbal handoff during the transfer process, because of competing demands, verbal communication did not always occur. The handoff is the subject of a Joint Commission on Accreditation of Healthcare Organization (JACHO) National Patient Safety Goal, which went into effect January 1, 2006 (Arora, 2006). Written as a new requirement to improve the effectiveness of communication among caregivers, this addition of standard handoffs requires hospitals to implement a standardized approach to hand-off communications and provide an opportunity for staff to ask and respond to questions about a patient’s care (Arora 2006).

The four steps of a standardized handoff include:

(1) Process- creating a standardized workflow map.

 (2) Content- a standard check-list for both groups of nurses using the current evidenced based guidelines for psychiatric nursing care.

(3) Implementation readiness to foster nursing leadership, buy-in, and initiate education of the checklist.

(4) Monitoring to ensure the protocol is in place and reevaluated to identify and resolve barriers.

 The Situation –Background- Assessment- Recommendation (SBAR) framework for communication between members of a health care team about the psychiatric patient's condition will be implemented as the handoff process by this project. SBAR will foster a culture of safety by promoting teamwork among both the ED and inpatient psychiatry nurses, Dr. Michael Leonard along with colleagues Doug Bonacum and Suzanne Graham at Kaiser Permanente of Colorado developed this technique (Institute for Health Improvement [IHI], 2011b).

We have adopted SBAR as the standardized handoff protocol for the ED Nurses. SBAR is an effective standardization of the handoff process as suggested by JCAHO (Arora, 2006). Two guiding principles underlie this model framework. First, the standardized protocol for handoffs, SBAR, will be tailored to the psychiatric discipline of the organization using information garnered during Phase II. Second the content will be centered on the mental status assessment and examination required during the handoff for best standards of psychiatric nursing care (Appendix I).

Therefore, the established SBAR form has been enhanced in this project to include the Mini Mental Status Exam (MMSE) instructions and definitions of the concepts and procedures that the MMSE encompasses (Appendix I).The forms will be placed in the psychiatry and ED units in specific and strategic locations (e.g., near the phone, with the unit secretary and on mobile computer carts) and utilized in presentations as handouts.

Strategic development of the communication strategy will serve as a guide for the education and integration of communication and teamwork in clinical practice. Multiple teaching strategies will be utilized to introduce the concepts, reinforce learning, increase retention, facilitate incorporation of the concepts into practice, and maintain the practice changes. A number of educational strategies will be utilized including worksheets, and PowerPoint presentations. The SBAR tool will be applied to actual patient situations to coach the team in communicating patient needs.

The goals of the educational program will include:

* Provide education for all ED and psychiatry nurses Integrate safe communication strategies into the organizational culture.
* Maintain consistency of the use of SBAR in ED and psychiatric nursing units

Intervention: Phase IV- Data Evaluation and Monitoring.

**Data Evaluation**

This implementation project will be evaluated using several different approaches: focus group interviews with ED nurses and psychiatry nurses; resurvey of the nurses.

The nurses will be trained to utilize the handoff and monitored for use for fourteen days. Re-survey the nurses after the implementation of the standardized handoff to evaluate if the perceptions regarding EMR obtained during Phase I have changed. Statistical analysis will be performed in the same manner as Phase I and reported. This report will evaluate the data collected and utilize process analysis of communication events.

Conclusion

 The cost of health care delivery in the US has steadily increased and will continue to rise to levels that are unsustainable owing to an increasing population, especially an aging population with chronic ailments. One important element to cost containment is the implementation and efficient utilization of technology including the EMR. Technology can increase productivity of health care professionals while increasing the quality of care and decreasing medical errors. Nurses can benefit from EMR implementation by receiving reliable information expeditiously to effectively manage the patient, accurately communicate intra-professionally and to efficiently effectuate patient transfer. It is important to periodically survey nursing personnel for comments and suggestions related to the effectiveness of technology so that future modifications and changes can be realized in continuous quality improvement for the workplace environment, staff productivity and overall patient care. The TRIP initiative process and model to standardize the handoff has the potential to result in improved patient care for the vulnerable psychiatric population. Mapping the process and building a standardized checklist of content can facilitate meeting the objectives of utilizing information technology to facilitate communication.

References

Agency for Healthcare Research and Quality (2006a).Streamlined Evaluation, Transfer, andAdmission Processes Significantly Reduce Waiting Times for Emergency DepartmentPatients Awaiting Admission to Psychiatric Facility. Retrieved from: http:// wwwinnovations.ahrq.gov/content.aspx?id=2286

Agency for Healthcare Research and Quality (2004). The TRIP Initiative. Retrieved from http://[www.ahrq.gov/research/trip2fac.htm#Initiative](http://www.ahrq.gov/research/trip2fac.htm#Initiative)

American Hospital Association (2011). Catholic Health Association of the United States. Retrieved from: http://www.chausa.org/Pages/Newsroom/Fast\_Facts/

Armijo, D., MDonnell, C., & Werner, K. (2009). Electronic Health record Usability; Interface

design considerations. AHRQ publication. Agency for healthcare research and

quality.

Arora, V., & Johnson, J. (2006). A model for building a standardized hand-off protocol. Joint Commission Journal on Quality and Patient Safety / Join Commission Resources,32(11) 646-65

Barrett, F., & Fry, R. (2005). *Appreciative inquiry: A positive approach to building*

 *cooperative capacity*. Chagrin Falls eOhio Ohio: Taos Institute Publications.

Bates, D. (2003) A proposal for electronic medical records in U.S. primary care. *J Amm Med Inform Assoc*. 1-10. Doi: 10.1197/jamia. M 1097.

Bennett, K., & Steen, C. (2010). Electronic medical record customization and the impact upon chart completion rates. *Family Medicine, 42*(5), 338-342.

Bomba, D. (2005). A description on handover processes in an Australian public hospital.

 *Aust Health Rev*. 29:68-79.

Brailer, D. (2005). Remarks by David Brailer, MD PhD. Retrieved from: <http://www.hhs.gov/healthiet/BrailerSpch05.html>

Burley, G., Bendyk, H., & Welchel, C. (2009). Managing the storm: an emergency department capacity strategy. *J Healthc Qual.*

Cantor, D. (2009). Emergency department utilization and capacity. *The Robert Wood Johnson Foundation Synthesis Project*.

Carroll, K., Bradford, A., Foster, M., Cato, J., & Jones, J. (2007), An emerging giant: nursing informatics (Electronic version). *Nursing Management,* 38(8), 38-42. Retrieved from: http://www.lib.montana.edu/epubs/indexes/health.html

Chaundhry, B., Wang, J., Wu, S., Maglione, M., Mojica, W., Roth, E., & Shekelle, P (2006)

 Systematic review: Impact of health information technology on quality, efficiency, and

 Costs of medical care. *Annals of Internal Medicine*, 144(10), 742-752.

Chuang, L., & Forman, N. (2006). Mental Disorders Secondary to General Medical

 Conditions. Retrieved from: <http://emedicine.medscape.com/article/294131-overview>

Dahm, M., & Wadensten, B. (2008). Nurses’ experiences of and opinions about using standardized care plans in electronic health records- a questionnaire study. *Journal of clinical Nursing*, 17, 2137-2145.

Davison, R., (1997). An instrument for measuring meeting success. *Information & Management* 32(4), 163-176.

DeLone, W. & McLean, E. (2002). Information systems success revisited. In proceeding of 35th Hawaii International Conference on System Science. *IEEE Computer Society*, Washington DC, USA, p. 238.

Deese, D., & Stein, M. (2004). The ultimate health care IT consumers: How nurses transform patient data into a powerful narrative of improved care. *Nursing Economics*, 22(6), 336 341.

Dirgley, C., Daugherty, K., Derieg, M.K. & Persing, R. (2008). Improving patient safety through provider communication strategy enchancements. In K. Jenrikseen, J. B. Battles, M.A. Keyes& M.L. Grady (Eds). Advances in; patient safety: New Directions and alternative approaches (vol.3: Performance and tools). Rockville (MD).

Fay-Hillier, T. M., Regan, R. V., & Gallagher Gordon, M. (2012). Communication and patient safety in simulation for mental health nursing education. Issues in Mental Health Nursing, 33(11), 718 726. doi: 10.3109/01612840.2012.709585; 10.3109/01612840.2012.709585

Fung, C.H., Woods. J.N., Asch, S.M. Glassman, P. & Doebeling, B.N. (2004). Variation in implementation and use of computerized clinical reminders in an integrated healthcare system. *American Journal of managed Care* 10(2), 878-885.

Haig, K. (2006). National Patient Safety Goals. SBAR:A share mental model for improving communication between clinician, Jt Comm J Qual Patient Saf 2006; 32(3):

Hardey, M., Payne, S., & Coleman, P (2000).’Scraps’: Hidden nursing information and its influence on the delivery of care. Journal of Advanced Nursing, 32(1), 208-214.

Harshberger, C.A., Harper, AJ., Carro, G.W., Spath, W.E., Hui, W., Lawton, J.M., Brockstein, B. E., (2011). Outcomes of computerized physician order entry in an electronic health record after implementation in an outpatient oncology setting. Journal of Oncology Practice/American Society of Clinical Oncology, 7(4), 233-237.doi: 10.1200/JOP.2011.000261; 10.1200/JOP.2011.000261

Hayrinen, K., Saranto, K., & Nykanen, P. (2008). Definition, structure, content, use and impacts of electronic health records: A review of the research literature. *International Journal of Medical Informatics, 77*(5), 291-304. doi: 10.1016/j.ijmedinf.2007.09.001

Headrick, L A., Barton, A. 3, Ogrinc, G., Strang, C., Aboumatar, H. J., Aud, M. A., Patterson, J. E. (2012). Results of an effort to integrate quality and safety into medical and nursing school curricula and foster Joint learning. Health Affairs (Project Hope), 31(12), 2669 2680. doi: 10.1377/rtltbaff.2011,0121; 10.1377/hlthaff.2011.0121; 10.1377/hltaff.2011.0121

Healthcare Information and Management Systems Society (2009). HIMSS Summary of Key Health Information technology Provisions. Retrieved from: <http://www.himss.org/content/files/HIMSSSummaryOfATTA.pdf>

Hillestad, R., Bigelow, J., Bower, A., Girosi, F., Meili, R., Scoville, R., & Taylor, R. (2005). Can electronic medical record systems transform health care? potential health benefits, savings, and costs. Health Affairs (Project Hope), 24(5), 1103-1117. doi: 10.1377/hlthaff.24.5.1103

Hollinworth, W., Devine, E. B.,Hansen, R. N., Lawless, N. M., Comstock, B. A.,Wilson-Norton, J. A., et al. (2007). The impact of e-prescribing on prescriber and staff time in ambulatory care clinics: a time-motion study. *The Journal of the American Medical Informatics Association*, 14(6), 722-730.

Institute for Health Improvement (IHI) (2011a). Improvement Report: Reducing Length of Stay in the Emergency Department for Psychiatric Patients. Retrieved from:

 [http://www.ihi.org/knowledge/Pages/ImprovementStories/MemberReportReducingLeng hofStayintheEDforPsychiatricPatients.aspx](http://www.ihi.org/knowledge/Pages/ImprovementStories/MemberReportReducingLengthofStayintheEDforPsychiatricPatients.aspx)

Institute for Health Improvement (IHI) (2011b). SBAR Technique for Communication: A Situational Briefing Model.

 [http://www.ihi.org/knowledge/Pages/Tools/SBARTechniqueforCommunicationASituatio](http://www.ihi.org/knowledge/Pages/Tools/SBARTechniqueforCommunicationASituation) nalBriefingModel.aspxJayaram, G. (2007).

Jayaram, G. (2007). Implementing performance improvement and measuring psychiatric care quality. *Psychiatry Edgmont* (Pa.: Township), 4(5), 58-61.

Joint Commission (2008). National Patient Goals Power point Presentation. Retrieved: <http://jointcommission.org/NR?rdonlyres/7079>

Joint Commission on Accreditation of Healthcare Organizations: *Sentinel Event Statistics-June 30,2005.* Retrieved[*http://www.jcaho.org/accredited+organizations/sentinel+event/sentinel+eventst tistics.htm*](http://www.jcaho.org/accredited%2Borganizations/sentinel%2Bevent/sentinel%2Beventst%09tistics.htm%20%20)

Karnas, J., & Robies, J. (2007). Implementing the electronic medical record: Big bang or

 Phased rollout? *Creative Nursing*, 2007(2), 13-14.

Kaufman, D. M., & Zun, L. (1995). A quantifiable, brief mental status examination for emergency patients. The Journal of Emergency Medicine, 13(4), 449-456.

Kazley, A. S., & Ozcan, Y. A. (2008). Do hospitals with electronic medical records (EMRs) provide higher quality care?: An examination of three clinical conditions. Medical Care Research and Review; MCRR, 65(4), 496-513. doi: 10.1177/1077558707313437; 10.1177/1077558707313437

Kohn, L. (2000). To err is human: An interview with the institute of medicine's linda kohn. *The Joint Commission Journal on Quality Improvement, 26*(4), 227-234.

Kossman, S. P., & Scheidenhelm, S. L. (2008). Nurses' perceptions of the impact of electronic health records on work and patient outcomes. Computers, Informatics, Nursing: CIN, 26(2), 69-77. doi: 10.1097/01.NCN.0000304775.40531.67; 10.1097/01.NCN.0000304775.40531.67

Leonard, M., Graham, S., & Bonacum, D. (2004). The human factor. The critical importance of effective teamwork and communication in providing safe care. *Quality and Safety in Health Care* 13 85-90

Liew D, k. M. (2003). Emergency department length of stay independently predicts excess inpatient length of stay. *Med J aust*. 524-6.

Liu SW, T. S. (2009). A pilot study examining undesirable events among emergency department-boarded patients awaiting inpatient beds. *Ann Emerg Med*, 288-94.

McCloughen, A., O'Brien, L., Gillies, D., & McSherry, C. (2008). Nursing handover within

 mental health rehabilitation: An exploratory study of practice and perception.

 International Journal Of Mental Health Nursing, 17(4), 287-295. doi:10.1111/j.1447-

 0349.2008.00545.x

McHugh, M. D., Kutney-Lee, A., Clmlotti, J. P., Sloane, D. M., & Alken, L. H. (2011). Nurses' widespread job dissatisfaction, burnout, and frustration with health benefits signal problems for patient care. Health Affairs (Project Hope), 30(2), 202-210. doi: 10.1377/h!thaff.2010.0lOO; 10.1377/hlthaff.2010.0100

Moody, L.E., Slocumb, E., Berg, B., & Jackson, D. (2004). Electronic health records documentation in nursing: Nurses’ perceptions, attitudes, and preferences. CIN: *Computer, Informatics, Nursing*, 22(6), 337-344.

New York State Office of Mental Health (2010). Annual report to the governor and legislature of New York State on comprehensive Psychiatric emergency

programs. Retrieved from: <http://www.omh.ny.gov/omhweb/statistics/cpep_annual_report/2010.pdf>

Newton, C. (1995). A decision support database for nurse care planning as part of a hospital information system. *Medinfo.MEDINFO, 8 Pt 2*, 1394-1398.

Otieno, O. G., Toyama, H., Asonuma, M., Kanai-Park, M. and Naitoh, K. (2007), Nurses’ views on the use, quality and user satisfaction with electronic medical records: questionnaire development. Journal of Advanced Nursing, 60: 209-219. Doi: 10.1111/j.1365-2648.2007.04384.x

Potter, P., Wolf, L., Boxerman, S., Grayson, D., Sledge, J., Dunagan, C., & Evanoff, B. (2005). An analysis of nurses' cognitive work: A new perspective for understanding medical errors. In K. Henriksen, J. B. Battles, E. S. Marks & D. I. Lewin (Eds.), *Advances in patient safety: From research to implementation (volume 1: Research findings)* (). Rockville (MD).

Richardson, DB, (2006). Increase in patient mortality at 10 days associated with emergency department overcrowding. *Med J aust.*, 213-6.

Robinson, G. E. (2011, November 30). Streamlined evaluation, transfer, and admission processes significantly reduce waiting time for emergency department’ patient awaiting admission to psychiatric facility. Retrieved: <http://www.innovations.ahrq.gov/content.aspx?id=2286&tab=1>

Sexton, A., Chan, C., Elliott, M., Stuart, J., Jayasuriya, R. & Crookes, P. (2004). Nursing

 handovers: do we really needthem? Journal of Nursing Management, 12, 37–42.

Schoolfield, M., & Orduna, A. (1994). Understanding staff nurse responses to change:

 Urilization of a grief-change framework to facilitate innovation. *Clinical nurse*

 *Specialist*, 8, 57-62.

Shendell-Falik, N., Feinson, M., & Mohr, B.J. (2007). Enhancing patient safety: Improving the patient handoff process through appreciative inquiry. The Journal of Nursing Administration, 37(2), 95-104.

Shetz, A.H. (2012). What are the implications of the institute of medicine report “the future of nursing: leading change, advancing health” for school nursing practice? NASN School Nurse (print), 27(6), 293-295.

Smetzer, J.L., & Cohen, M.R., (2005). Intimidation: Practitioners speak up about this unresolved problem. Joint /commission Journal on Quality and Patient Safety/Joint Commission Resources, 31(10\_, 594-599.

Smith, C. (2004). New technology continues to invade healthcare. *Nursing Administration Quartely*, 28(2), 92-98.

The Affordardable Care Act. (2012, March 3). Retrieved:

 http://www.whitehouse.gov/healthreform/healthcare-overview#healthcare-menu

Thede, L. (2008). Informatics: Electronic personal health records: Nursing’s role. The Online Journal of Issues in Nursing. 14 (1) doi:10.3912/ojin.vol12No1InfoCol01.

Tripp, J. S., Narus, S.P., Magill, M. K., & Huff, S. M. (2008). Evaluating the accuracy of existing EMR data as predictors of follow-up providers. *The Journal of the American Medical Informatics Association*, 15(6), 787-790.

Urquhart, C., Currell, R., Grant, M. J., & Hardiker, N. R. (2009). Nursing record systems: Effects on nursing practice and healthcare outcomes. Cochrane Database of Systematic Reviews (Online), (1):CD002099. doi(1), CD002099. doi: 10.1002/14651858.CD002099.pub2; 10.1002/14651858.CD002099.pub2

Verhovsek, E. (2010). Perceptions of interprofessional communication: Impact on patient care, occupational stress, and job satisfaction. Internet Scientific Publications, 12. Retrieved from: <http://www.ispub.com/journal/the-internet-journal-of-radiology> /volume 12-number-2/perceptions-of-interprofessional-communication- impact-on-patient care occupational-stress-and-job-satisfaction.html#sthash.q HBCUPNY.dpbs

Waltz, C.F., Strickland. O.L., Lenz, E.R., Measurement in Nursing Research. 2nd ed. Philadelphia: FA Davis; 1991.

Wang, S. J., Middleton, B., Prosser, L. A., Bardon, C. G., Spurr, C D., Carchidi, P. J., et al.,

 (2003). A cost-benefit analysis of electronic medical records in primary care. The

 *American Journal of Medicine*, 114(5), 397-403.

Zwarentein, M., Reeves, S., & Perrier, L. (2205). Effectiveness of pre-licensure interprofessional education and post-licensure collaborative interventions. Journal of Interprofessional Care, 19 Suppl 1, 148-165. Doi: 10.1080/13561820500082800

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Table 1.**EMR Questionnaire in Nursing satisfaction and intra-professional communication. |  |  |  |  |

****









Otieno, O. G., Toyama, H., Asonuma, M., Kanai-Park, M. and Naitoh, K. (2007), Nurses’ views on the use, quality and user satisfaction with electronic medical records: questionnaire development. Journal of Advanced Nursing, 60: 209-219. Doi: 10.1111/j.1365-2648.2007.04384.x

**Appendix 1**

**USE SBAR WHEN REPORTING RN TO RN**

**S** ituation **B** ackground **A** ssesssment **R** ecommendation

|  |  |
| --- | --- |
| S | **SITUATION****My name is: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Speaking to RN\_\_\_\_\_\_\_\_\_\_\_\_\_****Unit/Area I am calling from:****Patient’s Name****Pt.’s chief complaint****What happened?****Accepting PSYCHIATRIST \_\_\_\_\_\_\_\_\_\_\_ Medical MD\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_****Legal status 939 2PC Voluntary** |
| B | **BACKGROUND****Admission diagnosis and date** **State the pertinent medical history: RESP\_\_\_\_CV\_\_\_\_\_\_GI\_\_\_\_\_GU\_\_\_\_\_SKIN\_\_\_\_\_****LYMPH\_\_\_\_\_\_MUSCOLOSKELETAL\_\_\_\_\_\_ENDO\_\_\_\_\_NEURO\_\_\_\_\_OTHER\_\_\_\_\_****A brief synopsis of the treatment/medication given to date:****FALLS POTENTIAL YES/NO\_\_\_\_\_ELOPEMENT POTENTIAL\_\_\_\_\_\_DIET\_\_\_\_\_****Vital signs are:****UCG:\_\_\_\_ Urine Tox.\_\_\_\_\_ Substance abuse history\_\_\_\_ Last use\_\_\_\_\_ Results of LAB/ Diagnostics Tests/ACCU CHECK\_\_\_\_\_\_ XR/MRI RESULTS\_\_\_\_\_\_\_\_** |
| **A** | **ASSESSMENT/MMSE*** **ALERT/ORIENTED TIME\_\_\_PERSON \_\_\_\_PLACE\_\_\_SITUATION\_\_\_\_\_\_\_**
* **MOOD: Depressed\_\_\_Anxious\_\_\_\_Elated\_\_\_\_\_OTHER\_\_\_\_\_**
* **AFFECT: Depressed\_\_\_Anxious\_\_\_\_Neutral\_\_\_\_\_Blunted\_\_\_\_\_Flat\_\_\_\_\_\_**
* **THOUGHT PROCESS: Goal directed\_\_\_\_ Tangential\_\_\_\_\_\_FOI\_\_\_\_\_\_OTHER\_\_\_**
* **DELUSIONS: \_\_\_ TYPE\_\_\_\_\_ HALLUCINATIONS:\_\_\_\_\_\_\_\_\_\_\_TYPE\_\_\_\_\_\_\_\_\_**
* **SUICIDAL YES OR NO \_\_\_\_HOMICIDAL YES OR NO \_\_\_\_\_\_\_\_ EXPLAIN\_\_\_\_\_\_\_**
* **AGITATION/AGGRESSION YES/NO\_\_\_\_\_\_IMPULSE CONTROL\_\_\_\_\_\_\_\_\_ EXPLAIN\_\_\_\_\_\_ IF YES, TIME OF MEDICATION GIVEN \_\_\_\_\_\_\_\_\_**
* **GROSS INPAIRMENT ADL’S YES/NO EXPLAIN \_\_\_\_\_\_\_\_**
 |
| **R** | **RECOMMENDATION*** **Medication/Tests/Txs. order to be given in the unit until P.E. rendered \_\_\_**

**Neuro checks\_\_\_\_ F.S\_\_\_\_\_ Other\_\_\_\_\_\_** |

Institute for Health Improvement (2011). Improvement Report: Reducing Length of Stay in the Emergency Department for Psychiatric Patients.

**Table 2: SBAR and EMR Communication Tools PowerPoint**

****

****

****

****

****

****