Analyze This! Building Analytics Capacity in the Department of Veterans Affairs Workforce

Kathleen Brandt, RN-BC, MS, PMP

Abstract

Problem: The Internet of things in health care will generate massive amounts of data requiring a workforce that is engaged, educated, and capable of harnessing data effectively to improve decision-making, learn more about individual patients and groups, and support population health management. Information gathered from three separate workforce assessments at the Department of Veterans Affairs (VA) revealed data analytics as the number one identified learning need in the VA informatics and analytics communities. **Project Scope**: Funded by a grant from the Department of Health and Human Services (HHS), Office of the National Coordinator(ONC) for Health Information Technology, the Department of Veterans Affairs, in collaboration with Bellevue College in Washington State, developed and deployed an 8-week online course, Introduction to Health Care Data Analytics. The goal was to educate 1,000 VA staff within two years. The course was widely publicized to a large, diverse audience and generated much enthusiasm and interest. Participating staff represented all disciplines and levels in the VA organization, including informaticians, data analysts, clinicians, quality managers, and administrative and technical staff. For further incentive, physicians, registered nurses, pharmacists, and psychologists were eligible to receive 31 continuing education credits. The course provided foundational knowledge and skills in health care data analytics. Students learned about the tools and techniques used for data analytics in health care organizations and gained insights into effectively communicating data analysis. The curriculum included interactive hands-on learning activities using real world scenarios. Costs associated with the course delivery were minimized by using resources already available, e.g. an on-line textbook, VA Subject Matter Experts as discussion board moderators, and an open source LMS software (Moodle) to deliver the course. No travel costs were incurred. **Results and Benefits**: Within two days of opening course registration, over 1,700 staff enrolled, with another 362 on the waiting list. The course evaluations are overwhelmingly positive with 95% of the students expressing that the course content was relevant to their job; 94% felt that the skills learned in the training will improve their job performance and 90% would recommend this course to their colleagues/coworkers. As a result of taking this course, students reported that they were more equipped to manage and analyze data, utilize data for decision-making, communicate results with their leadership, and improve customer service overall. Further evaluation of the course is planned to be administered 90 days post course completion(March 2017). This will be a Level 3 Evaluation that looks at how well the course impacted job performance. The project team added sessions starting in February and September 2017. Plans to include staff from the Department of Defense are in the works. Content from the course will be publicly available through HHS at healthit.gov starting June 2017.

How the Internet of Things (IoT) can improve interoperability and clinical workflows in IV medication administration

Francisco Cuesta, BSN
Co-presenter: Aron Weiler, SWE

Abstract

Healthcare environments have an abundance of medical devices intended to improve safety by providing real time insights into patient conditions, accuracy in care delivery, and timely and effective actions in support of patient care. The evolution of IoT technology has enabled flexibility, scalability, and portability in nearly every care environment and workflow associated with the patient. Over the past two decades health information technologies and systems have evolved rapidly and become essential to healthcare providers. Most hospitals and IDNs today have an Electronic Medical Record (EMR) system. These systems are implemented to manage patient demographics, clinical history, medication prescriptions, diagnostic imaging, labs, and more. Additionally,some EMR systems offer medical device integration and bi-directional communication capability, enabling interoperability. In an interoperable environment, medical devices share data with EMR systems, and vice versa, to promote safety. For example, a medication order can be automatically populated on an infusion pump, avoiding risks inherent in manual programming. Still, safety requires numerous interactions among patients, providers, and devices. New connectivity features may make workflows simpler and safer. Future systems using proven technologies such as Radio Frequency ID (RFID), Bluetooth Low-Energy (BLE), and Near Field Communication (NFC) will go beyond interactions between the EMR and devices to enable direct communication between patient care devices. This communication will foster data sharing between all medical devices involved in the patient continuum of care and move us forward to the ultimate goal of making medication administration workflows safer and more efficient.

Program transformation from paper documentation to proactive data transfer: Use of an app in outpatient pediatric cardiology home monitoring program

Lori Erickson, MSN, CPNP-PC

Abstract

Background: Single ventricle cardiac infants are a rare and high risk population with 10-15% inter-stage mortality and frequent morbidities including frequent readmissions in the first 6 months of life. Traditional home monitoring uses inter-professional clinical teams to evaluate data documented on paper by parents for symptom management. To predict change in hemodynamic status, nurse coordinators and advanced practice nurses use weekly phone or email communications to review these data (weights, oxygen saturations, and feeding logs). Since 2014, we have monitored interstage infants with single ventricle (SV) at home with CHAMP, a tablet PC with cloud-based instant analytic algorithms.Thus nurses can review and intervene on home monitoring data instantly instead of weekly. Nursing coordinators are a front line for care during the week and APRN's are on call 24 hours a day for this high risk population. **Methods**: From May 2014 to June 2015, SV infants were enrolled in a crossover study comparing CHAMP to traditional paper documentation kept in a binder. All were discharged with the binder; they were randomized to receive CHAMP instead of the binder 1 or 2 months after discharge. One month after randomization, caregivers chose either the binder or CHAMP for the remainder of the interstage. Charts were reviewed for neonatal characteristics, readmission data including events prior to readmission, length of stay (LOS), ICU LOS and charges. High resource utilization (HRU) was defined as the 25% of readmissions that were associated with the greatest ICU LOS. HRU patients were compared to all others, who were defined as Low resource utilization (LRU) patients. **Results:** 31 infants were monitored for 4911 interstage days. There was 80% adherence with data transfer while using CHAMP. There were no interstage deaths and 73 inter-stage readmissions. HRU patients did not differ from LRU patients in neonatal characteristics. HRU babies were significantly more likely to be unplanned and born to younger mothers. The time from clinical change to communication with the clinical team was nearly 4 hours longer in HRU admissions ($p=0.009$). HRU babies had higher charges ($105,925 v. $34,669 median, $p=0.003$), LOS (12.5 v. 1.2 days $p<0.001$), and more cardiac ($p=0.011$) and general surgeries ($p=0.037$). The association of CHAMP with LRU was trending but did not reach statistical significance, likely due to sample size ($p=0.071$). **Conclusion:** Interstage SV infants are at high risk for readmissions. Delays in care are associated with HRU. Using CHAMP to transfer data to nursing coordinators may help decrease delays. Further study may provide the basis for predictive analytic algorithms.

Realizing Continuity of Care Through Oncology Navigation Nurses' Use of Electronic Documentation

Rosella Ganoudis, MSN,MBA, RN

Abstract

Background: It is the role of oncology navigation nurses to link cancer patients and their families and caregivers to the appropriate resources to overcome barriers to healthcare (Oncology Nurses Society, 2017). Because providers in our setting found it difficult to locate documentation by navigation nurses, we formed a task force to evaluate options for improvement. Members included research nurses, medical records staff, informatics staff, and oncology staff from inpatient, outpatient, and breast health settings. During the course of a year the team performed real-time and retrospective workflow analyses, conducted team building exercises, developed a process improvement plan, developed documentation standards and templates, conducted a pilot, implemented revisions and then rolled out the new processes and materials house wide. **Aim:** The main focus of this project was to have the oncology navigators work collaboratively with other team members to create an electronic document that was detailed, met the ONS standards, and could easily be located in the electronic medical record (EMR) by all health care providers, with the goal of ensuring continuity of care. **Methods:** Real-time work flow analyses revealed that the oncology navigators were scattered throughout the hospital working in their own silos. There was no uniformity in how the navigation assessments were conducted. In addition, there was no standard on what information was gathered nor how it was documented. Moreover, the real-time work flow analyses showed a lack of team cohesiveness that needed to be addressed before defining the documentation needs. A retrospective chart analysis of the current electronic documentation was conducted to get a better understanding of the magnitude of the problem. Having come to understand the needs for improvement, the task force created documentation guidelines. These became the foundation for the development of a uniform Oncology Navigation Report that included all the ONS standards for navigation. **Results:** 1) Oncology Navigation Nurses are now a cohesive team who are still meeting once a week. They continue to work on oncology issues and discuss cases to ensure all resources available are being utilized to provide excellent care to cancer patients. 2) Physicians are able to locate the Oncology Navigation Report, allowing for continuity in care across disciplines. 3) The Oncology Navigation Report is a comprehensive document that follows ONS standards for Oncology Navigation. **Conclusion:** Collaboratively developed, standards-based electronic documentation by oncology nurse navigators has enhanced communications through all disciplines caring for the patient who has cancer. The patients are receiving the services they need to support them through a difficult diagnosis. The development of electronic documentation resulted in an oncology navigation team's becoming a cohesive group promoting continuity of care. **References**: Oncology Nursing Society, (2017). Oncology nursing society oncology nurse navigator core competencies. Retrieved from: https://www.ons.org Kannampallil, T.G., Amraham, J., & Patel, V. L. (2016). "Methodological framework for evaluating clinical processes: A cognitive informatics perspective". Journal of Biomedical Informatics, 64, 342-351

Phone Note: Capturing Patient Care Outside the Hospital Based Clinics

Oscar Glorioso, MSN
Co-presenter: Kristin Kammrath, MSN

Abstract

Problem Statement: Informatics and Practice Administrators discovered that there was not a streamlined way to capture patient encounters /communication outside of the clinic visit. Staff uses paper documents, email, and other clinical systems (Teleresults). Non-clinical staffs were also found to handle medical issues. It became apparent that the existing processes for managing communications were not robust enough to ensure effective and efficient care of patients. **Methods** 1) Designed and implemented a phone note document on the main EHR with the functionality to save on a Pre-Visit or Discharged account. 2) Implemented new workflows that capture communications on the phone note. **Results**: 1) Increased efficiency of physicians and clinic staff issue identification and response. 2) Increased accuracy of communication. 3) Improved collaboration among physician and clinic staff. 4) Communication between patient and staff is part of the legal medical record. **Significance**: Electronic Health Record (EHR) systems are widely used tools for clinicians to manage patient care. Despite the implementation of EHRs, there are still clinical areas with disparate systems or components that are documented on paper. In these situations, clinic staff can be faced with the challenge of capturing patient communication and clearly seeing the clinical picture without negatively impacting patient safety or continuity of care. At Baylor Scott & White Health, we leveraged change management to streamline processes and placed importance in developing standard data sets (documentation template) to capture patient interaction with staff in all types of clinic setting.

Predictive Analytics: Proactive Integrated Capacity Management

Tamira Harris, PhD, MBA, MSN, CPHQ

Abstract

Despite differences in how healthcare systems are funded and administered worldwide, nursing leaders often face similar challenges and can learn from one another. One challenge consistently facing nurse executives is how to improve clinical outcomes and drive efficiency while reducing labor costs. The answer: creating transparency in a data-driven culture and facilitating a cultural shift from a reactive to proactive culture. In this session, you'll hear executives from three different organizations across the United States. They will share their diverse stories of how they are using data to maximize efficiencies, optimize care delivery and obtain outcomes that help sustain or improve financial margin. These nursing executives will guide you through examples of organizational change, operationalizing efficiency through predicting demand, balancing staffing, delivering high quality care and managing avoidable days while enhancing productivity. The drive to organizational excellence requires new processes and embedding the use of technology into daily operations to create true cultural change. The data obtained along the journey - when employed correctly - can be a strong staff motivator to further the buy-in and effort. Nursing executives and staff created transparency using real-time data to track patients, identify bottlenecks and streamline care coordination, optimizing patient flow to minimize length of acute care stays. Process changes that included creating quality flow rounds with visual displays ensured that clinicians are in sync with patient needs and status. These processes among others support the early identification of patients with complex psychosocial needs or complicated discharges that are likely to miss an expected discharge date and time. Managing quality parameters, such as vaccines delivered prior to discharge, indwelling lines, and consultations, were noted daily in the quality flow rounds, ensuring care team collaboration towards related goals. When clinicians can be proactive, leveraging data across nursing units and departments, and with ease of availability, they are empowered and engaged with optimizing the patient journey. Additional outcomes include using predictive analytics to meet patient demand and effectively manage staffing, enabling the executives to achieve significant financial impact. Staffing efficiently requires forecasting along the continuum to include long-term, monthly, weekly, and daily planning. Executives and staff were able to predict patient and staffing demand, allowing them to proactively optimize staffing and create innovative staffing models, achieve unit agility, and open new units. Creating a data driven culture requires nursing leadership, a commitment to transparency and empowerment, and the ability to understand and use technology as an agent of change. Stepping back to assess the culture, nurture a plan, and engage staff makes optimization attainable. After this session, you, too, can lead the way to change in your organization.

Clinical Care Classification (CCC) Usability in EHR using the Healthcare Data Dictionary (HDD)

Rachael Howe, MS, BSN, RN
Co-presenter: Tiffany Harman, BSN, RN

Abstract

Introduction/Aims: The Clinical Care Classification (CCC) is a standardized nursing terminology recognized by the American Nurses Association (ANA) for representing nursing practice concepts in Electronic Health Records (EHRs). There are two interrelated terminologies within the CCC - Nursing Diagnoses & Outcomes, and Nursing Interventions & Actions.All of these are mapped to SNOMED CT and Logical Observations Names and Codes (LOINC). SNOMED CT is a collection of healthcare concepts used in clinical documentation and reporting. LOINC is a collection of laboratory and clinical observations used to facilitate information exchange. The Healthcare Data Dictionary (HDD) can be used to utilize the CCC terminology and mappings to standard terminologies and facilitate interoperable exchange of health information between EHRs programmatically. The HDD is a terminology server containing standard terminologies required to document clinical care, including SNOMED CT, LOINC and CCC. **Methods/Process/Procedures**: The CCC is integrated in SNOMED CT and LOINC, with terms and codes from those terminologies anmapped to the correlating CCC concepts. These mappings were evaluated for accuracy by subject matter experts. Then the structure of the terminology itself was analyzed. A design was created to implement the CCC structure and mappings into the HDD. The design was then implemented and tested using real CCC data and use cases. **Results**: To implement the CCC into the HDD so that it could be used programmatically, the terminology had to be split into four sub-terminologies. The CCC terminology has its own OID, and the following four terminologies were created: Clinical Care Classification (CCC) of Diagnoses, CCC of Nursing Interventions/Actions, Clinical Care Classification (CCC) of Actual Outcomes, and Clinical Care Classification (CCC) of Expected Outcomes, each with their own OIDs. Within CCC, outcome codes are used either as expected outcomes (goals) or actual outcomes (evaluation) and they are represented by the same code. For example, 'Stabilize Activity Intolerance' (A.01.1.2 - Expected outcome) and 'Activity Intolerance Stabilized' (A.01.1.2 - Actual outcome) have the same code but mean two different things. This makes it difficult to represent the context of a specific code within a database and requires splitting the two into different sub terminologies for the database to programmatically provide the correct context for the concept. In addition to this, specific CCC mapsets were created between the CCC concept and SNOMED CT and LOINC. This way end users can easily determine the correct SNOMED CT or LOINC term for the CCC concept. **Discussion/Outcomes**: Standardized clinical terminologies require a plan for managing their relationships to other terminolgies. Mapping to standard terminologies within one robust terminology server is a key aspect in achieving interoperability. Continued use and support of standardized nursing terminologies maintains nursing knowledge and supports the documentation of nursing care. Future work is needed to provide custom APIs for specific end user use cases. These are the next steps in supporting the CCC as a nursing terminology and providing a simple solution for implementation.

Research Podium Award

Evaluation of continuous multi-parameter surveillance monitoring, a wearable medical device, on code blue/treat team events for medical-surgical floor patients.

Tonya Judson, RN
Co-presenter: Ada Holyfield, MSN, RN

Abstract

Background: The use of continuous multi-parameter surveillance monitoring (CMSM) fosters early recognition of deteriorating vital signs with data trends, prompting clinical intervention to promote patient safety and decrease failure to rescue events. CMSM monitors a patient's heart rate, blood pressure, oxygen saturation, respiration and skin temperature. The CMSM real-time data transmits wirelessly to the electronic health record (EHR) and to a remote viewer display (RVD) at the nurses' station. Vital signs that fall outside safe parameters alert the nursing staff at the RVD and their mobile handheld device, prompting intervention. The CMSM communicates through Wi-Fi, allowing monitoring of a patient while in the room, on the unit, or during transport throughout the hospital. Additionally, the CMSM unit is a wearable medical device, facilitating patient mobility. For this study, a large, southeastern, suburban hospital utilizes CMSM on their medical-surgical floor. **Objective:** The aim of this study is to examine code blue/treat team events for non-CMSM and CMSM medical-surgical floor patients to determine if CMSM improves patient outcomes. **Methods:** A retrospective study was conducted by reviewing the hospital's code blue/treat team logs and comparing the data to the EHR, ascertaining CMSM device usage. Outcomes were noted for both non-CMSM and CMSM patients that experienced a code blue or treat team event on the medical-surgical floor. Staff education procedures were also evaluated by comparing current education practices with the recommended vendor-supplied educational tools. **Results:** The CMSM patients had an overall decrease of code blue/treat team events, a decrease in patients being transferred to a higher level of care post an event, as well as an increase in patients remaining on the unit post an event versus non-CMSM patients. Further review revealed instances of incorrect usage of the CMSM device, possibly contributing to failure to rescue events with the CMSM patients. Review of the staff education practices revealed a lack of formalized training for new hires, non-usage of the vendor-recommended instructional videos and clinical skills checklist, as well as an outdated CMSM policy and procedures manual. **Conclusions:** It appears that CMSM of medical-surgical patients improves patient outcomes. A formal CMSM device training program, as well as ongoing staff education of correct CMSM device usage could continue to improve patient outcomes and decrease failure to rescue events.

Exploration of Portal Activation by Patients in a Healthcare System.

Kimberly Krakowski, MSN, RN, CENP, CAHIM
Co-presenters: Season Majors, MSN, RN, OCN, CAHIMS;
and Patricia Mook, MSN, RN, NEA, CAHIMS

Abstract

A study of patient portal use was conducted at a not-for-profit healthcare system in Northern Virginia. The healthcare system serves more than 2 million people each year. Between July 2014 and June 2015, 461,700 different patients used the portal at least once. Univariate analysis and multivariable logistic regression indicated associations between patient portal activation and predictive factors. Multiple findings emerged: patient portal activation was greater for English speaking patients; differences in portal activation were observed by patient age, and patients who had an identified primary care provider had greater portal activation. The implications were that patients who have limited English skills and have economic challenges may be less engaged. This review demonstrates the importance of understanding the population using a patient portal and provides insight to the future development of how to engage patients to interact with their providers through the portals.

Practice Podium Award

The Characteristics of Pressure Injury Photographs from the Electronic Health Record in Clinical Settings

Dan Li, Ph.D, RN
Co-presenter: Carol Mathews, WOCN, RN

Abstract

Aims: To analyze and understand the characteristics of images of pressure injury (PI) (formerly called pressure ulcer) stored in electronic health records (EHR). **Background**: To improve the quality of PI documentation, photographing PIs and storing the images in the EHR is accepted practice in many hospitals. Clinical decisions regarding the progress and treatment of PI often rely on the information presented in PI images. As new technologies develop, image processing and computer visualizion can make possible the automated measurement of PI size and wound tissue segmentation. However, most research in this area deals with strictly controlled conditions for PI images that are confined to the wound region only. Translating these technologies to PI images taken in clinical environments faces the challenges of controlling the complex photographic conditions and of the lack of standardization of wound photography. In this study, PI images stored in an EHR were reviewed to analyze the characteristics of PI photography in clinical settings. Through better understanding of those characteristics, we expect to help image processing experts shorten the gap between laboratory and clinical environments when translating these new image processing technologies. Moreover, we studied possible approaches to designing a standardized wound photography protocol for clinical environments. **Design**: An observational descriptive study. **Methods**: Copies of a set of 289 PI images were obtained from a western Pennsylvania hospital. The original images were stored in the wound care documentation component of the EHR. The original PI images were taken by the wound care nurses in clinical settings during daily wound care service. In this study, those images were reviewed one by one by researchers to analyze their characteristics, including the relative position of the PI in the images, the shooting angle of the digital camera, inclusion or exclusion of clinical background materials and their colors,and any materials contaminating the wound surface**. Results**: Of all the PI images, only 6% were confined to the wound region only. Clinical background including clothes, bed sheets and gown existed in 94% of the PI images. In 91% of the images, the PI was presented in the central part of image. In 24%, white powder or lotion covered part of the PI surface. The digital camera lens was not oriented parallel to the plane of the PI in 46% of the images. There were no PI images in the sample that met the strictly controlled image conditions required for commercially available image processing tools for PI segmentations. **Conclusions**: The findings of this study indicate that a digital photograph of PI may increase the accuracy of the assessment and documentation. To extract the wealthy information from PI images through novel image processing technologies, developers must consider the characteristics of PI images in clinical settings. Furthermore, clinicians require a standardized PI photography protocol to assure the accuracy and objectivity of PI recording. The standardization of PI photography may increase utilization of new technologies like computer visualization and telemedicine.

The Pros and Cons of Collecting Patient-Generated Health Data

Danielle Miller, PhD(c), RNC-OB,C-EFM
Co-presenter: Brianna Zink

Abstract

Providers base their care decisions on information received from the patient, such as vital signs, symptoms, medical allergies, laboratory results, and a variety of other types of data. Traditionally, the information is generated in a clinical setting: during a visit, in a lab, in a diagnostic screening office, etc. Much of these data constitute a one-time snapshot, often gathered infrequently. New technologies, howeve,r can enable patients to generate important data outside of these settings and with greater frequency. The greater depth, breadth, or continuity of data that patients share with their providers may lead to better care and outcomes. Patient-generated health data (PGHD) is health-related data such as health history, symptoms, biometric data, treatment history, lifestyle choices, and other information that are created, recorded, gathered, or inferred by or from patients or their designees to help address a health concern. The incorporation of PGHD can complement current and existing clinical data, potentially fill in the gaps of the clinical information and provide a holistic and comprehensive indication of the patient's health. The use of PGHD offers an opportunity to capture needed information for use during care, with potential cost savings and improvements in quality, care coordination, and patient safety. Some providers may be concerned that incorporating PGHD into clinical processes will increase the burden of reviewing data, subject the providers to unrealistic patient expections, and increase professional liability. Specifically, there are concerns that providers will be held accountable for information they did not receive or reviewe in a timely manner, especially if the information requires an urgent response. Additionally, some providers have expressed concern about the financial impact of PGHD including the use of staff and physician time for reviewing, processing and analyzing the data and potentially integrating it into the EHR. On the other hand, patients may be concerned about their providers failing to use PGHD to meet their health care expectations. Concerns may include whether the information sent was securely received and saved in the patient's chart; whether the information was shared with his or her provider or family members as appropriate; and whether the patient generated data were valued and well-received by their doctor. In a study done by Project Health Design, health care professionals identified three main benefits of PGHD accessibility in clinical settings: 1) deeper insight into a patient's condition; 2) more accurate patient information, particularly when of clinical relevance; and 3) insight into a patient's health between clinic visits, enabling revision of care plans for improved health goal achievement, while avoiding unnecessary clinic visits. Including patient generated clinical data has the ability to impact the care received by the patient. It can be used to improve outcomes and enhance the path of communication between the patient and the provider. Incorporating this potential is not without risk, however; organizations should assess and consider how existing processes, workflows and systems can be impacted by PGHD and how to incorporate these vital data to reap the substantial benefits.

Patient Progression: A Multi-Discinplinary Approach to Moving Patients Safely, Quickly, and Efficiently

Nancia Odom, RN, MSN, BC

Abstract

Background: Duke Regional Hospital (DRH), a part of the Duke University Health System, is an acute care community hospital with 369 licensed beds located in Durham, NC. In 2016 DRH's board of trustees set a strategic priority for fiscal year 2017: to lead in the delivery of highest-quality, patient centered care. **Objectives**: The specific goal for this strategic priority was to improve the emergency department (ED) length of stay for admitted patients. This is to be accomplished by improving patient progression. High ED lengths of stay and ED crowding can negatively impact patient care, patient satisfaction, and patients' leaving without being seen by a medical provider. DRH's goal with improving patient progression was to provide safe, efficient and timely movement of patients from admission to discharge. Our additional goal was to decrease patient wait times at transition points. **Methods**: DRH used a multi-disciplinary approach to improve patient progression. Hospital staff in multiple departments across various disciplines impact the moving of patients during an admission, including Care Management, Environmental Services, and physicians. Our team also included the hospital president and vice-president of operations. We spent several months completing a deep dive into process flow and understanding the barriers to patient throughput at our facility, to achieve a true understanding of all issues. Once issues were identified, our team further divided into four workgroups, each with a specific list of action items to complete. Through our deep dive into the barriers, the action items were noted to be, if completed, the most impactful to improving the hospital's patient progression. The four work groups were: Clinical Staffing; Discharge Process; General Medicine; and Data. **Results**:Some of our results include 1) the creation of a General Medicine unit incorporating our teaching service patients, clinical nurses, and providers; 2) the completion of an Admission and Discharge nurse pilot; and most notably, 3) a 50% reduction in the number of patients waiting greater than 240 minutes (4 hours) for an inpatient bed. Other results include a hospital-wide, unit-level based dashboard that notes metrics and performance over time, redesigned patient throughput processes, and improved communication among multiple disciplines. In addition, the ED length of stay for admitted patients has decreased by 10% since the beginning of the fiscal year. Throughout the length of the project, a core team meets bi-weekly to review metrics and discuss any safety issues with throughput. Issues are also escalated in real time to management for immediate resolution to best meet the needs of the patient. **Significance**: A strategic, multi-disciplinary approach with ongoing leadership oversight and data review is critical to improving patient progression to move patients safely, efficiently and quickly through a healthcare facility.

Nurse Leader Clinical Dashboard of Nursing Care Omissions

Ronald Piscotty, PhD, RN-BC

Abstract

Purpose: To examine the impact of a clinical dashboard that will be populated with unit level bundled nursing care omissions (i.e., omitted nursing interventions and nursing care activities) that are related to adverse events such as Hospital Acquired Infections (HAIs). The unit data will be synthesized (bundled) and presented using Tableau data visualization software. **Study design**: A quasi experimental pre/post test time series design will be used to evaluate the effectiveness of the LCD. **Intervention**: Development and implementation of a prototype LCD of nursing care omissions using missed nursing documentation in the electronic health record (EHR) as a proxy of nursing care omissions (missed nursing care). **Setting & sample**: The project will take place at a large urban academic medical center in Baltimore, MD. The medical center is composed of 33 inpatient nursing units managed by 5 nursing directors. The sample will consist of registered nurses from five high-volume medical and/or surgical units or intermediate care units. **Data sources**: Data will be obtained from the EPIC EHR, other clinical data systems, and administrative systems. The identification of all data sources will occur in the data acquisition phase of the dashboard development. **Procedures**: Procedures will occur in three phases. The first is the validity testing of the data retrieved from the EHR. The second phase is the development and testing of the prototype dashboard. The third phase is the implementation and measurement of the effectiveness of the LCD. **Results**: Results will be analyzed and presented for the first 2 phases of the study. Preliminary results from phase 3 may be available prior to the presentation. **Conclusions**: Discovering innovative interventions to decrease nursing care omissions related to adverse events is necessary to improve patient safety and quality of care. Additionally, accurately measuring nursing care omissions in real time is necessary to determine the effectiveness of interventions to decrease the rate of these adverse events.

Method for Measuring Nursing Workload and Resources

Virginia Saba, EdD, RN, FACMI, FAAN

Abstract

A method for measuring nursing workload and resource requirements is now possible when documenting a Nursing Plan of Care (NPOC) by using the Clinical Care Classification (CCC) System with its Information Model in a patient's Electronic Health Record (EHR). The CCC System consists of two standardized, coded, nursing terminologies: 176 Nursing Diagnoses with 528 Nursing Outcomes and 804 Nursing Interventions Actions; and its Information Model represents the six steps/standards of the Nursing Process: (Care Component (Assessment), Expected Outcome/ Goal (Outcome Identification), Intervention (Planning), Action Type (Implementation), and Actual Outcome (Evaluation). Together they provide the framework for documenting electronically an individualized NPOC for an episode of illness in a hospital. The NPOC is initiated with the physician admission orders, the admission holistic assessment, and their interpretation by the nurse who develops the NPOC for the specific patient's individualized orders which consist of the nursing diagnoses/problems, the goals to resolve them, the nursing interventions to treat them to achieve their outcomes. However each of the nursing interventions in NPOC is selected based on the interventions selected to address the patient's diagnosis and are combined one of four Action Type Qualifiers: 1) Assess or Monitor, 2) Perform, Provide Care, 3) Teach or Instruct, or 4) Manage or Refer, including its frequency per day. These measures are then used to calculate the proposed NPOC workload using Relative Value Units (RVUs) (actual or estimated) for the specific nursing intervention and then combined with the other interventions required for treating the specific diagnosis to achieve the proposed outcome for that diagnosis. This process is used for all the nursing diagnoses/problems being addressed for the patient and when combined provide the actual workload in time required for that specific patient's care. (NOTE: Relative Value Units have been determined through research). Take for example a patient who has been admitted as an inpatient from the Emergency Room after a Cyst found on the patient's back was incised and removed. The NPOC was developed from both the orders from the physician and assessment by the admitting nurse as follows: 1) Wound Care three times a day, 2) Dressing Change three times a day, 3) Penicillin one time per day for treating the infection, and 4) Pain status checked three times per day. The NPOC may be routine but what is different is the how the RVUs are administered to calculate the workload for the patient services per day. Using the RVU method it was determined that the patient would require 6 ½ hours of nursing care per day. The care cost could also be determined as well. The details for how to calculate workload will be explained in detail during the session.