PATIENT HEALTH RECORD HARVARD SARAH COLLINS PUBLICATIONS pdf

1: The MedTech Boston 40 Under 40 Healthcare Innovators

Sarah Collins's research while affiliated with Harvard Medical School and other places Publications (4) Implementation of acute care patient portals: recommendations on utility and use from six.

What inspired you to pursue nursing as a career? I always knew I wanted to work in health care. When it came time to look at undergraduate programs, I applied to both nursing and non-nursing schools. I chose to attend the University of Pennsylvania and majored in nursing with a minor in health care management because I was impressed by the program and the opportunities for collaboration. As an undergraduate, I developed a keen interest in cardiac and critical care nursing. How did your early clinical experiences as a critical care nurse lead you to pursue a PhD in nursing informatics? Early in my career, I worked in the cardiac intensive care unit at Massachusetts General Hospital. During these years, I began to understand how information technology IT systems and software solutions could make work either easier or more challenging for health care professionals. After, I went on to practice at another hospital and observed that my ability to deliver care was different. The best practices and standards of care for those patients are the same. Tell us what your work is focused on now. We have found this is associated with patient outcomes of mortality and cardiac arrest in the hospital. These signals can be subtle. When a nurse is worried about a patient, they assess them more often. We think detecting this surveillance behavior can be useful for increasing awareness of the patient stateâ€"otherwise known as situational awarenessâ€"among the larger health care team. Additionally, communication in a hospital environment is known to be a major factor in patient safety errors. Computer systems can be leveraged to facilitate these processes. One of the aims of the study is to work closely with care providers to build a clinical decision support system that can notify team members when a patient has expressed these signals, allowing them to better anticipate patient deterioration and facilitate early intervention. We are using the FHIR Fast Healthcare Interoperability Resources standard to implement this clinical decision support in two different electronic health record systems at New York Presbyterian and Partners Healthcare to increase generalizability and scalability. What brought you back to Columbia after earning your PhD here? I was very happy and excited to return and to make this my home.

2: JMI-JMIR Medical Informatics

Email: sac@www.enganchecubano.com Website Sarah Collins, RN, PhD is an Assistant Professor of Biomedical Informatics and Nursing at Columbia University. Prior to her appointment at Columbia she was a Senior Nurse and Clinical Informatician at Brigham and Women's Hospital in the Department of Medicine Division of Internal Medicine and Primary Care and an Instructor in Medicine at Harvard.

The authors explore the role of health IT to improve quality, barriers to eMeasurement , and health IT interventions by considering linkages between nursing care and patient outcomes for a select set of nursing sensitive indicators including patient falls, pressure ulcers, and the patient experience. We discuss specific challenges, such as barriers for routine data capture to populate nursing sensitive indicators and the use of health IT to promote positive outcomes. The conclusion addresses the implications of the current state of health IT and identifies areas for further nursing research. There is longstanding evidence that linkages exist between nursing care and improved patient outcomes. Despite the scientific advancements that have occurred since the s, the quality of care in United States remains suboptimal. A series of Institute of Medicine IOM reports published over the past decade suggest that error rates are high and the quality of care across the United States U. Even where evidence exists, it is inconsistently applied in practice McGlynn et al. The cost of healthcare is also of concern. Secondary use of data for quality measurement represents a paradigm shift that requires transformative changes in practice Unsustainable costs and unreliable quality are stimulating changes in healthcare policy and practice. The use of health IT has long been recommended as a strategy to facilitate cost effective, high-quality, and safe patient care Committee on Data Standards for Patient Safety, The American Recovery and Reinvestment Act ARRA provides incentives for providers and hospitals to adopt certified electronic health records and to use them in a meaningful way, including facilitating care coordination and electronic submission of data for quality reporting purposes Centers for Medicare and Medicaid Services, Rapidly evolving healthcare policy that is driving adoption and use of health IT and quality measurement standards hold potential for transformation of the healthcare system but enhancements to both are needed. Clinical information systems have traditionally been designed to support clinical tasks and to capture data needed to support billing of physician services and regulatory requirements Cusack et al. Nursing-sensitive indicators are defined as measures that reflect the structure, process and outcomes of nursing care ANA, In this article, we will demonstrate the role of health IT in building linkages between nursing care and improved patient outcomes focusing on two mechanisms: The following set of indicators are used to demonstrate the current capabilities of health IT for building such linkages: We will identify existing barriers and then make recommendations for improvements needed to routinely build linkages between nursing care and patient outcomes. The prerequisites for eMeasurement include standardized performance measures in an electronic format; clinical information systems that capture structured, coded data; and administrative and clinical workflows that facilitate consistent documentation or capture of the data needed to populate the electronic measures AHA, In addition, a standard approach for quality measurement beyond the organizational level is needed to support the use of eMeasures for benchmarking. Multiple challenges related to these prerequisites exist that make it difficult to build linkages between nursing care and patient outcomes. This discussion will describe some of these challenges. Identifying relationships between structural aspects of patient care e. Currently, the National Quality Forum NQF is leading an effort to develop e-measures to ensure that data used for clinical documentation can be reused to measure patient outcomes as a byproduct of care National Quality Forum, b. Some nursing sensitive measures, such as patient fall rate and falls with injury, are included in the QPS. Barriers to eMeasurement Using Nursing Sensitive Indicators Measurement of quality using nursing sensitive indicators is complex as the data needed to populate these measures comes from multiple sources Measurement of quality using nursing sensitive indicators is complex as the data needed to populate these measures comes from multiple sources, many of which are not electronic. Health IT systems

that are integrated into the workflow and that generate structured coded data as a byproduct of both administrative processes and patient care are needed to support nursing workflow and to populate eMeasures. Widespread use of eMeasures will ensure that indicators used across disparate health IT systems are accurate and comparable. The Commonwealth Fund has developed a typology Table 1 for categorizing the five broad types of eMeasures that currently exist, ranging from those translated from traditional measurement sets e. HIT-facilitated e-indicators Measures that, while not conceptually limited to HIT-derived data sources, would not be operationally feasible in settings without HIT platforms. Meaningful use measures such as the percent of unique patients in a given practice who are provided online access to their health information i. HIT-system-management e-indicators Measures needed to implement, manage, evaluate, and generally improve HIT systems, and they are primarily intended for use by the parent organization to improve local systems. Percentage of providers who override medication safety alerts in the electronic healthcare record EHR. Percentage of patients who received an incorrect intervention due to an error in the clinical decision support provided by the EHR. In theory, data recorded in an electronic record can then be reused for multiple purposes, but in practice, secondary use remains an elusive goal. As noted above, there are several prerequisites to achieving secondary use of data for benchmarking and for establishing linkages between nursing care and improved patient outcomes AHA, Challenges related to standardization, availability, and workflow and secondary use of data, in general and specific to nursing sensitive measures, are discussed below and also displayed in Table 2. The availability of standardized eMeasures is a prerequisite to automated quality reporting and benchmarking. The NQF is retooling existing measures to support electronic measurement, but the lack of availability of structured, coded data in the electronic record to auto-populate eMeasures is a barrier to widespread use. As illustrated in Table 2 , data required to populate nursing sensitive measures exist in disparate sources e. Exclusion criteria may require manual processes or sophisticated decision logic for processing. The fact that assessment content varies across organizations serves as an additional barrier to e-Measurement. For example many different fall risk assessment scales exist e. Fall prevention process measures require a multifaceted assessment of risk for fall see Table 2 but the measure does not specify which fall risk assessment scale should be used or which assessment data are required to populate the measure. At this time, none of the nursing sensitive quality measures that are currently endorsed by the NQF are designated as eMeasures National Quality Forum, b. Availability of structured, coded data. Structured, coded data are needed to populate eMeasures. GOV, provides incentive payments to hospitals and providers that use certified electronic systems and encode clinical data with standardized terminologies. MU legislation is expected to drive adoption of certified EHRs and terminology standards to make structured, coded data available to populate existing eMeasures. However, even if adopted and fully implemented, the recommended data sets are medically focused and may be inadequate to represent nursing sensitive care and associated outcomes ANA, Workflow barriers exist to capturing clinical data at the point of care in an interoperable format. When nurses do document interventions intended to improve patient outcomes, it may not be in a format that supports secondary use e. To establish linkages between nursing care and patient outcomes, data are needed that represent the structure, processes, and outcomes of nursing care. In Table 2 , selected nursing sensitive process and outcome indicators related to patient falls, pressure ulcers, and patient experience are displayed, including the measure type and data source. These measures offer examples of some of the challenges associated with using health IT to establish linkages between nursing care and patient outcomes. Specifically, data needed to populate measures may not be routinely documented. If documented, the format may not be conducive to secondary use. Moreover, data needed to populate the measures exist in disparate systems, and the exclusion criteria require complex inference and processing, which is difficult to automate Kennedy, As noted in Table 2 , some data elements required to populate the selected set of nursing sensitive process and outcome measures for patient falls and pressure ulcers come from the medical record. The denominators come from administrative databases. Assuming that electronic systems are in place, MU standards are implemented, and that clinical and administrative systems are interoperable, the fall and pressure

ulcer risk assessment measures can be translated into e-measures. However, this translation is complex and health IT systems with sophisticated decision logic are required to ensure that excluded populations are removed from the dataset. For example, the fall risk assessment measure Table 2 excludes patients who are under age 65 at the time of the measurement. Many systems available today are not capable of this level of inference Kennedy, Moreover, the data elements needed to populate the patient fall rate and pressure ulcer prevalence measures come from both clinical information and incident reporting systems that may not be electronic or interoperable. Patient falls, fall related injury, and pressure ulcer staging are routinely recorded in incident reporting systems and less consistently in the medical record. Furthermore, as noted in Table 2 , the pressure ulcer risk assessment measure has a long list of exclusion criteria National Quality Forum, b. Data needed to automate the decision logic to operationalize the exclusion criteria may not be available in many electronic systems in use today. A positive patient experience is of increasing importance to hospitals across the United States because it is a quantifiable and targeted measure for quality improvement and, starting in , is a required metric for the value-based purchasing program of the Centers for Medicare and Medicaid Services CMS Bush, b ; The Joint Commission, Patient experience is a nursing sensitive outcome measure, but is broader in that it is sensitive to the care delivered by the entire interprofessional team. It is a standard, item survey of patient experience that measures level of satisfaction and perspectives of inpatient hospital care along six axes: The vision guiding use of the HCAHPS survey is based on a framework in which all hospital employees share decision-making roles and responsibilities to enhance the patient experience Bush, a. The survey, which can be found at www. As illustrated in table 2 , exclusion criteria are extensive and existing electronic systems are not capable of this level of inference Kennedy, Valid measurement instruments, such as the HCAHPS survey, hold value when they are used for reporting or benchmarking purposes, direct improvement strategies, and measure change overtime. In its current paper and phone call based form, HCAHPS is a translational e-indicator, assuming its data is stored in a reusable and electronic form. The literature also calls for training and trust building to empower staff to feel comfortable using HCAHPS data as one tool for practice improvement Brady, This notion is consistent with the concept of HIT-facilitated eMeasures. If HCAHPS data collection is enabled online and leverages structured data from IVR it could be made available to practicing clinicians for practice improvements and benchmarking. Providing clinicians with ongoing access to HCAHPS data for their patient population would not be feasible in settings without HIT-enabled data collection or dissemination platforms. Therefore, while benchmarking for a population is feasible, analyzing scores for all patients seen by a specific provider or clinic is not. Additional HCAHPS measurement challenges include a lack of risk-severity and facility-specific adjustments, and limitation to English and Spanish speaking populations Bush, b. For example, there is no adjustment for patients with higher comorbidities and rates of depression, but these patients are associated with lower HCAHPS scores. Other variables cited as challenges for hospitals include facilities that have double rooms for patients, which likely impacts lower patient experience scores. Health IT Interventions In the sections below, the value of health IT in linking nursing care with improved patient outcomes is explored. By leveraging the eMeasures discussed in the previous section, well-designed health IT interventions can target care delivery processes and create linkages between nursing care and patient outcomes. A Cochrane Review published in evaluated the effects of nursing record systems on nursing practice and patient outcomes Urquhart et al. The authors found only nine studies that were conducted with sufficient rigor to meet the inclusion criteria. Of the nine studies, only four evaluated computerized nursing record systems and the remaining five studies evaluated paper-based systems. The authors concluded that there was some evidence that health IT systems could help improve a specific problem such as reducing time spent on data collection, but there was no evidence that nursing care planning and documentation systems improved nursing practice or patient outcomes Urquhart et al. This review highlights several challenges related to the use of health IT to link nursing care with patient outcomes, including 1 limited rigorous research; 2 lack of clarity regarding what data should be recorded and how these data will be used; and 3 lack of integration of electronic systems into the clinical workflow. Each of these

challenges is described below. As mentioned, very few rigorous studies have been conducted to evaluate the impact of health IT on nursing sensitive outcomes. The Cochrane review called for more quasi-experimental and randomized control trials to test the effectiveness of nursing record systems Urquhart et al. One challenge to design the types of comparative effectiveness studies needed to rigorously test health IT systems is that careful planning is needed to collect baseline data or to identify an appropriate control group. In addition, the variability that exists between different implementations of health IT systems makes it difficult to conduct rigorous comparisons. For example, even systems designed for the same purpose e. More standardized systems are needed to support rigorous evaluation.

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3: Search | Harvard Catalyst Profiles | Harvard Catalyst

Sarah Collins, RN, PhD is an Assistant Professor of Biomedical Informatics and Nursing at Columbia University. Prior to her appointment at Columbia she was a Senior Nurse and Clinical.

Keynote Speaker Morning Keynote: Mike has held just about every role in nursing a nurse can hold, including Candy Striper to Senior Director. His entire career has been in the critical care arena from staff nurse, nurse manager, clinical nurse specialist, nurse practitioner and most recently Senior Director of Nursing. He has over 50 publications as well as several funded studies. In addition, he has held leadership roles in a number of academic settings. Mike has a passion for critical care nursing as well as innovation. Mike is a disruptive innovator, a skilled clinician, avid researcher, motivational speaker and caring leader. In almost publications and over three dozen federally funded grants, Dr. Ness has discovered causes and established best prevention and treatment approaches for diseases from cancer, to pregnancy complications, to cardiovascular disease. A recognized expert in medicine and public health, Dr. Her research is focused on identifying and intervening on patient risk for harm by applying computational tools to mine and extract value from electronic health record EHR data and leveraging user-centered design for patient-centered technologies. With nearly 20 years of experience in technology and human-centered design, Jonathan specializes in uncovering and capitalizing on opportunities for innovation. Since starting his company RNvention with his wife Dawn also a nurse in , Wayne has gotten one patent, two trademarks and three hundred thousand dollars in venture capital funding. Wayne also signed a collaborative agreement with Louisiana State University Health Shreveport to spin off technology using photogrammetry to scan premature neonates to create custom fitting cannulas for neonatal and pediatric patients. He founded the company in based on his core belief that healthcare systems and healthcare providers should have the 21st century tools that allow them be efficient and effective. Today, over half a million nurses use the mobile app and thousands of hospital departments use the NurseGrid Manager platform. As the first nurse to hold this academic title in the United States, he takes great pride in educating the nation on the role of the nurse as an innovator and entrepreneur. Outside of Ohio State, Tim is the founder of Quality Health Communications, a digital Clinical Decision Support System that communicates real-time patient quality and safety metrics to the healthcare team. His primary area of patent practice is medical devices, but he also practices in other areas of the medical field such as biotechnology and imaging. In addition, he is very active in working with start-up companies and advising them through early stage investment and commercialization. Richard also engages in drafting and negotiating licenses for his some of his clients. He is a frequent lecturer on intellectual property and commercialization topics for his clients, local universities, and local and national organizations; and is also adjunct faculty at the Case Western University School of Law. Richard graduated from Purdue University in with a degree in Mechanical Engineering. Before entering law school at the University of Dayton in , he worked as an engineer with G. Aircraft Engines, during which time he became an inventor of a U. Richard has practiced intellectual property law with the Tarolli firm since , and became Managing Partner in

4: Publications Authored by George Getty | PubFacts

Sarah Collins, '09, PhD, RN, is an assistant professor of biomedical informatics and nursing at Columbia University. She has a joint appointment in the Department of Biomedical Informatics (DBMI) and the School of Nursing and recently returned to Columbia after earning a PhD in nursing informatics at the School of Nursing in and completing a National Library of Medicine Fellowship at.

5: Patient participation in formulating and opening sequences - Edinburgh Research Explorer

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Sarah A Collins Brittany Couture Ann DeBord Smith Esteban Gershanik Elizabeth Lilley Frank Chang Cathy Yoon Stuart Lipsitz Aziz Sheikh James Benneyan David W Bates J Patient Saf Apr Epub Apr

6: Relationship Between Nursing Documentation and Patients'€™ Mortality

Sarah Collins, RN, PhD is a Senior Clinical and Nurse Informatician in Clinical Informatics Partners eCare at Partners Healthcare Systems and an Instructor in Medicine at Harvard Medical School and Brigham and Women's Hospital, Department of Medicine Division of Internal Medicine and Primary Care.

7: Sarah A. Collins, RN, PhD | AMIA

A patient safety plan dashboard was developed that captures disparate data from the electronic health record that is then displayed as a personalized bedside screensaver.

8: AMIA Informatics Summit - Session Details

Sarah A. Collins is a nurse informatician in clinical informatics research and development, Partners Healthcare Systems and an instructor in medicine in the Division of General Internal Medicine, Brigham and Women's Hospital and Harvard Medical School in Boston.

9: 6th Annual Nursing Innovation Summit | Cleveland Clinic

Sarah Collins, RN, PhD Senior Clinical and Nurse Informatician, Partners eCare, Partners HealthCare; Instructor in Medicine, Harvard Medical School and Brigham Health Even as a child, Dr. Sarah Collins knew that she wanted a future at the cutting edge of healthcare and science.

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