

Volume 9, Issue 1

Spring, 2017

Special points of interest:

- Stimulating innovation in health care environments
- Using social media to improve the patient experience
- Efficacy of electronic health record use
- Bringing hospital-level care into patient's homes
- Global Fellows Corner with Dorien Zwart, MD, PhD
- Recent publications from Center researchers

Inside this issue:

The Role of Social Media Around Patient Experience and Engagement	2
A National Survey Assessing the Number of Records Allowed Open in Electronic Health Records at Hospitals and Ambulatory Sites	3
Honors & Awards	4
Innovation in Care: The Home Hospital Project	4
Global Fellows Corner	6
Recent Publications	7

Center Updates: a seasonal review

Innovative Environments in Health Care: Where and How New Approaches To Care Are Succeeding

Summary by Theresa Fuller, Research Assistant

The current state of health care needs to drastically improve, in cost, safety of delivery, and quality. Other fields facing similar deficits focus heavily on Research and Development to meet these challenges, considering commitment to innovation to be an internal quality metric. In “Innovative Environments in Health Care: Where and How New Approaches To Care Are Succeeding,” author David W. Bates, MD, MSc et al. argue that health care should do the same, and prioritize innovation.

According to the authors, health care does not currently exhibit the responsive innovation of other fields for two main reasons. First, the risk of ineffective (or worse, harmful) innovation has led practitioners to be hesitant in prematurely adopting newly-innovated methods. Second, the traditional health care payment system does not incentivize efficiency. The latter may change as new models of payment drive innovation by creating a focus on value-based care. For example, bundled payment has caused a shift toward telemedicine and outpatient work, where the quality of the care is similar and the setting is less expensive.

No matter the health care setting, Bates et al. attest that there are certain factors crucial in supporting innovation, including: teaching innovation, financial support, physical space dedicated to innovation, supporting the innovator’s time, and providing innovators with guidance. Innovators should be given intellectual property consultation, and they should have access to key personnel. Most significantly, the authors assert that innovation should be a strategic priority, with protected time for innovators and a long term outlook. These factors should all exist in the context of visible support from high level leadership.

Bates et al. note the challenges that most academic centers exist as a grid, rather than as a traditional hierarchy. These “matrixed environments” invite a few complications. Determining how to support innovators’ time, and how to triage the many disparate specialists’ ideas, presents logistical and finan-

cial challenges. Innovation leadership cannot meet with everyone in the entire medical system to hear their ideas or assess the potential value of their goals. Instead, innovation centers should look to structured means to vet innovation (e.g., fellowship programs, "hackathons," "sandpit events").

This latter point, the development of means to hear, evaluate, and respond to potential areas of innovation, represents a central challenge for innovation centers. With a wide range in success of innovations, it is important to both support many fledgling ideas while focusing resources on a few highly successful ones.

According to the authors, academic innovation centers that focus on identifying and implementing innovations appear to be on the rise. The authors note that non-academic centers often support innovation externally (e.g., supporting start-ups in exchange for equity). They also delve into five representative academic innovation centers, each with differing focuses, supporting agencies, and methods for supporting innovators.

Cleveland Clinic Innovations: innovators submit their ideas to market analysts and medical product experts, who guide the chosen inventors toward commercialization.

Mayo Clinic Center for Innovation: uses human factors techniques and consumer experience to improve patient-provider interactions and the process of health care delivery. Their work has informed problem-based decision aids for patients, as well as telemedicine technology.

University of Pittsburgh’s Center for Medical Innovation: identifies small companies that offer innovative health care services, invests in them, and codevelops with them. The center supports small businesses and entrepreneurs, providing education and consulting services.

(Continued on page 2)

Healthcare organizations are expected to be accountable for those whom they serve, and social media can help to give a voice to un-captured patient experiences.

Rozenblum R, Greaves F, Bates DW. [The role of social media around patient experience and engagement](#). *BMJ Qual Saf*. 2017 Apr 20. pii: bmjqs-2017-006457.

Bates DW, Sheikh A, Asch DA. [Innovative Environments In Health Care: Where And How New Approaches To Care Are Succeeding](#). *Health Aff (Millwood)*. 2017 Mar 1;36(3):400-407.

The Role of Social Media Around Patient Experience and Engagement

Summary by Kety Silva, Research Assistant

The era of social media has reached many Americans through advances in the technological market. People across demographics are using social media. Facebook, Twitter, SnapChat, YouTube, Wikipedia, and Instagram are just some of the social media platforms that put the world at our fingertips. We are able to connect with friends, read reviews online, start a blog, and access a sea of information. The world has never been this connected before, and our devices keep us interacting daily with the larger global community in real time. Many companies and national organizations are using social media to engage with their constituency in order to improve the ways they make and deliver goods and services. Healthcare institutions can do the same to improve the patient experience and care quality.

In a recent article for *BMJ*, Ronen Rozenblum, PhD, MPH et al. explore the benefits and challenges to implementing the use of social media in healthcare. Currently, health organizations use the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) as a formal means of measuring patient experiences. The HCAHPS data is public and is tied into federal funding for healthcare institu-

tions. Social media could serve as a useful tool for healthcare in conjunction with the HCAHPS when measuring patient experiences.

Social media platforms can also serve as a reservoir of information for both the healthcare organization and patients. Like many Fortune 500 companies are already doing, healthcare institutionally can leverage social media to engage patients in discussions and decisions about the care they receive, gather patient opinions regarding their experiences, monitor ratings, and promote business. On an individual level, patients could use social media to review hospital and provider ratings, engage with their providers, learn from others who have similar conditions, and self-manage their care.

Despite these benefits, social media integration into healthcare presents its own challenges. Although social media is transcending economic, geographical, and social barriers, there is a selection bias towards the young, tech-savvy, and wealthy demographic. There is concern from clinicians that social media monitoring by healthcare institutions will be used for employee assessment. Clinicians fear that patient feedback via so-

cial media may negatively or inaccurately represent their productivity or their abilities as providers, and cause them to be subject to blame and punishment by their employers. Converting the social media language into useful data could also be a barrier for healthcare companies trying to navigate the nuances that social media creates. In healthcare, maintaining HIPAA security is crucial to providing safe and trustworthy patient care, and social media use in healthcare brings forth concerns regarding privacy and confidentiality of patients who post on these platforms. Ethical issues regarding online monitoring of social media by providers themselves are also a challenge, and must be addressed before moving forward with the institutionalization of social media into medical practice.

Social media breaks boundaries. People want to share their experiences and engage with others who can relate to them. Healthcare organizations are expected to be accountable for those whom they serve, and social media can help to give a voice to un-captured patient experiences. Although there are barriers to implementation, hospital systems can find the means to overcome these concerns in ways that benefit both patient and institution.

Innovative Environments in Health Care

(Continued from page 1)

University of Pennsylvania Center for Health Care Innovation: focuses internally on the problems of redesigning service delivery, with a diverse and dedicated innovation staff. Innovators are brought to the center by competitions, and are supported both financially and with expert consulting.

Grisinger Health System's ProvenCare: develops and sells the tools it develops as a for-profit agency, often in the form of road maps for redesigning systems in order to improve outcomes by standardizing innovation.

Acknowledging the difficulties in innovation, specifically around supporting innovators and then spreading successes, the authors summarize their call for prioritization with the following: "Do fewer projects, but do them better; allow the important to triumph over the urgent; and use a 'slow trigger, fast bullet' approach—that is, find the root cause of a problem before deciding on a solution." With this focus, the authors suggest, we can affect change in the areas of health care that need it most.

A National Survey Assessing the Number of Records Allowed Open in Electronic Health Records at Hospitals and Ambulatory Sites

Summary by Ryan Crook, Research Assistant

Increased adoption of health information technology (HIT) has led to the rising use of electronic health record (EHR) systems, with more than 4,000 hospitals and 600,000 ambulatory care providers implementing EHR systems nationwide. Many EHR vendors have developed systems which allow for multiple patient records to be open at once in order to improve efficiency. A major issue with this practice, though, is the risk of increased wrong-patient errors within these systems. This risk has led many HIT safety experts to recommend limiting these systems to opening no more than one patient record at a time. However, adherence rates for these recommendations and decision-making rationale of administrators are unclear. In this article, Jason S. Aldeman, MD et al. seek to address this knowledge gap by conducting a nationwide survey via the American Medical Informatics Association (AMIA) and the Association of Medical Directors of Information Systems (AMDIS).

Data was collected through a survey sent to the AMIA and AMDIS listservs in March 2014. Respondents were asked to identify their EHR vendors, specify the number of patient records allowed by their institutions to be open simultaneously, and provide rationale behind decision-making processes regarding these policies. Analysis was conducted at the facility level, and organization-configured and vendor-designed maximums for the number of records capable of being open were differentiated between. Organization-configured maximums were classified as Restricted (1 record open at a time), Hedged (2 records open simultaneously), and Unrestricted (≥ 3 records open simultaneously).

Representatives from 112 organizations responded to the survey.

Seventy-nine of these organizations used EHR systems in both inpatient and outpatient settings, 25 in only inpatient settings, and 8 in only outpatient settings for a total of 191 facilities examined. All major EHR vendors were represented and respondent organizations were widely distributed across the US. Of the 191 study facilities, 167 (87.4%) used an EHR with a vendor-designed maximum that allowed multiple records open at once. This percentage was consistent across inpatient (91 of 104; 87.5%) and outpatient (76 of 87; 87.4%) settings. In the remaining 24 facilities, the vendor-designed maximum was only one, excluding them from analysis.

Of the 167 facilities included in the analysis, 38.3% were Restricted by facility-configured maximums, 17.4% were Hedged, and 44.3% were Unrestricted. Decisions regarding the number of records open simultaneously were invariably driven by the need to balance safety and efficiency in each setting. Despite this consistency, there was significant disagreement with regards to where the balance lay. In Restricted settings, respondents indicated that any benefit to efficiency due to having more than one patient record open was outweighed by the presumed risks to safety. However, several of these facilities indicated that providers used workarounds, such as opening multiple instances of the EHR system on numerous computers, which they were concerned posed an even greater risk of errors. Unrestricted facilities reported increased efficiency as a justification for increased error risk, but provided additional measures (color coding, patient photos, etc...) as risk-management tools. Despite this, it was acknowledged that many of these methods were used inconsistently. Finally,

Hedged organizations reported that having two records open simultaneously was the “sweet spot” that optimized efficiency without introducing too much risk for error. However, these organizations also reported that the extent of efficiency optimization and risk reduction are unknown.

Two other categories emerged from the data collected: 1) Some organizations indicated that they had switched the number of allowed medical records from one configuration to another (for instance switching from Unrestricted to Restricted due to experiencing errors, or Restricted to Unrestricted to increase efficiency); or 2) The number of records allowed open simultaneously varied by provider role.

The results of this study show that, across a diverse geographic area and selection of EHR vendors, many organizations are not adhering to the safety guidelines proposed by industry experts. Comments from respondents suggest these decisions are made in order to balance safety and efficiency. However, the significant disagreement noted between organizations appears to be due to a lack of evidence linking the number of patient records open concurrently to frequencies of wrong-patient errors, and limited data supporting the experts’ recommendation to allow only one patient record open at a time. The mechanisms by which wrong-patient errors occur in this context, as well as the magnitude of the risk of these errors, needs to be established to provide a base for the decisions regarding EHR policies to be grounded in evidence. Due to the near ubiquitous nature of EHR systems across the US, rigorous studies assessing these and other factors are needed to inform decision-makers.

Many HIT safety experts recommend limiting EHR systems to opening no more than one patient record at a time. However, adherence rates for these recommendations and decision-making rationale of administrators are unclear.

Adelman JS, Berger MA, Rai A, Galanter WL, Lambert BL, Schiff GD, et al. [A national survey assessing the number of records allowed open in electronic health records at hospitals and ambulatory sites](#). J Am Med Inform Assoc. 2017 Apr 17.

Honors & Awards

By Hilary Stenvig, Research Assistant

Dykes Receives Virginia K. Saba Nursing Informatics Leadership Award

Patricia Dykes, PhD, RN, FAAN, FACMI, Program Director for The Center for Patient Safety Research and Practice, was recently awarded the Virginia K. Saba Informatics Award by the American Medical Informatics Association (AMIA), the leading professional association for informatics professionals. Dr. Dykes was recognized at the 40th anniversary of the AMIA Annual Symposium in Chicago this past November for her innovative and cutting-edge work in the field of nursing informatics.

The Virginia K. Saba Nursing Informatics Leadership Award, which is AMIA's highest honor for members focusing on nursing informatics, recognizes an individual's significant constructive impact on patient care as well as the awardees' distinguished nursing career. Its namesake, Virginia K. Saba, EdD, Honorary PhD, DS, RN, FAAN, FACMI, LL, spearheaded the nursing informatics movement and pioneered the integration of computer technology into the nursing profession. Her prestigious award is given to individuals who have a substantial record of contributions toward advancing the discipline of nursing informatics. Anyone who has had the privilege of working with Dr. Dykes will know this award is much deserved, and the Center would like to extend many congratulations to Dr. Dykes for this remarkable accomplishment!

DGIM employees named to Medtech Boston's "40 Under 40 Healthcare Innovators" List

Sarah Collins, RN, PhD and Jeff Greenberg, MD, MBA were both recently selected for Medtech Boston's "[40 Under 40 Health Care Innovators](#)" list for their commitment and contributions to bringing positive change to our healthcare system.

Dr. Collins is a Senior Clinical and Nurse Informatician in Clinical Informatics for Partners eCare and an Instructor in Medicine at Harvard Medical School. Her research focuses on modeling, developing, and evaluating patient-centered collaborative informatics tools to advance patient safety and clinical decision-support. Some of her most notable initiatives include the MySafeCare app, which allows patients and care partners to submit concerns and compliments to enhance safety data and enable follow-up in real-time, and CONCERN (Communicating Narrative Concerns Entered by RNs), which uses machine learning of EHR data to predict and prevent patient mortality.

Dr. Greenberg is the Medical Director of the [Brigham Innovation Hub](#) (iHub) and the Co-Founder of [Firefly Health](#), a primary care company that uses proprietary data and software tools to transform and deliver high-quality, cost-effective, safe primary care. His role with iHub includes engaging physicians in defining, measuring, and improving the value of care delivered in an attempt to drive more efficient and patient-centered care through the development, evaluation, and commercialization of digital health platforms and tools. Dr. Greenberg continues to see patients at BWH, and is an Instructor in Medicine at Harvard Medical School.

Innovation in Care: The Home Hospital Project

By Megan Duckworth, Research Assistant

The past century has been an era of incredible medical breakthroughs. Despite this progress, there are still numerous ways that care can be improved, including where and how patients receive it. For some acute care patients, the hospital is the best setting to receive care; for others, the hospital poses risks, like falls and infections, and can be disruptive and costly. For these patients, David Levine, MD, MA, a current fellow who as of July 2017 will become a Clinical Investigator in the Division of General Internal Medicine and Primary Care, seeks to implement a better alternative to the traditional hospitalization.

Dr. Levine was awarded a \$100,000 Brigham Research Institute **BRI**ght Futures Prize to fund the innovative Home Hospital project, which aims to

provide "the right care, to the right patient, at the right time," by bringing world-class medical care into the comfort and convenience of patients' own homes. Dr. Levine and co-principal investigator Jeffrey Schnipper, MD, MPH conducted a pilot of the first randomized controlled trial of home hospital studies, and are expanding the study this May.

The Home Hospital project was piloted at BWH, and will be re-launched at BWH and BWFH. Twenty-one patients participated in the pilot. Patients admitted to the Emergency Department who required inpatient treatment for specific problems including infections (pneumonia, cellulitis and complicated urinary tract infections), exacerbated heart failure and exacerbated asthma were randomly approached with the option to carry out their hospi-

*Dr. Levine was awarded a \$100,000 Brigham Research Institute **BRI**ght Futures Prize to fund the innovative Home Hospital project, which aims to provide "the right care, to the right patient, at the right time."*

Research and Education Fellowship Opportunities

The Center offers a unique learning experience for individuals seeking to expand their knowledge and skill set for initiating safer and higher quality care. To date, the Center has provided training opportunities for more than 50 fellows from the United States and 18 countries around the world.

The fellows will train with the Patient Safety and Quality leaders at the Brigham and Women's Hospital (BWH) and Harvard Medical School (HMS). Fellows are expected to learn how quality and safety are operated, measured and reported at the departmental, hospital, institutional, national, and international levels. There are two tracks available: a Research Track and an Educational Track.

Research Track

The program curriculum covers the topics described below; however, visiting scholars have the opportunity to define an individualized area of interest. Fellows will be expected to design and implement various research projects in an area appropriate for the fellowship and within their area of expertise.

- Adverse Drug Events/Medication Errors
- Human factors consideration/Usability of interfaces of IT
- Building measurement systems for quality and safety
- Infection Prevention
- Cultural Change
- Informatics
- Communication and Coordination
- Lack of adequate test follow-up
- Cost effectiveness of risk reducing strategies
- Medication Reconciliation
- Clinical Decision Support
- Natural language processing, data mining and machine learning
- Diagnostic Errors/Improvement
- Nursing Informatics
- Electronic Prescribing (CPOE)
- Nursing Sensitive Outcomes
- Errors/Enhancements
- Patient-centered care and patient experience engagement
- Fall Prevention
- Pharmacovigilance

Education Track

This program has a number of didactic activities throughout the year including faculty-led seminars, lectures, workshops and conferences. Fellows will participate in ongoing informatics and patient safety workshops and seminars led by Harvard faculty. Fellows will learn of the impact of team training. Fellows will work to develop a program suitable for their home institutions.

Through its affiliation with Brigham and Women's Hospital, Partners HealthCare and Harvard Medical School, the Center offers professional and academic development opportunities such as interdisciplinary rounds focusing on general medicine, nursing, patient safety, quality and informatics; the [Program in Clinical Effectiveness](#) (the fellow must apply separately for this program) and Harvard Medical School CME courses to enrich the fellowship experience.

Topics covered:

- Quality and Safety
- Leadership
- Education
- Information Technology
- Clinical Operations
- Diagnosis Safety and Improvement

[Click here to view the Brochure and Application Form](#)



Global Fellows Corner, Dorien Zwart, MD, PhD

By Jenzel Espares, Research Assistant

For each issue, the Center's Global Fellows are invited to share their experiences in the program, and how working with the Center has influenced their own patient safety initiatives.

Dorien Zwart, MD, PhD is a Harkness Fellow currently working in the Center for Patient Safety Research and Practice. Dr. Zwart's collaboration with the Center began in August 2016, when she obtained a Harkness Fellowship to work alongside Dr. David Bates and Dr. Jeffrey Schnipper on a care transitions project, titled "Connecting Two Worlds: How Care Transition Interventions Work in the Different Contexts of Primary and Secondary Care." In this project, she is aiming to develop a model for understanding the effect of care transition interventions (CTIs)—interventions that try to improve the outcome of patients transitioning from hospital to home. Since these interventions are inherently complex and take multiple factors into consideration, Dr. Zwart is working to disentangle the interplay in this model and isolate the "working mechanisms" that assist an intervention in producing an outcome. Describing these working mechanisms then helps to elucidate the potential effects of CTIs, and adjustments can be formulated to maximize the efficacy of these interventions.

Dr. Zwart spends a portion of her time as an associate professor in the Department of General Practice in the Julius Center for Health Sciences and Primary Care at the University Medical Center Utrecht in the Netherlands. She has also been working as a family physician since 2003 at the Primary Health Care Center De Bilt in the Netherlands, a healthcare center that regularly sees around 8,000 patients.

In the past, Dr. Zwart has completed internships in the Caribbean, Central America, and various parts of Europe with the objective of observing and experiencing different medical cultures. She received her Medical Degree from the University of Groningen, her Medical Specialty Degree from the University Medical Center Utrecht, and her Doctorate from the Graduate School of Life Sciences at the University of Utrecht. She finds her niche in what she calls an "academic general practitioner," and comments on her involvement in both academia and clinical care: "Dutch general practitioners mostly work clinically in private practices, but I have the privilege to work in a group that really values the academic work as well. I am available for only two days a week at the clinic I work at, which is not convenient being a family physician, but I think it's necessary to stay connected in academics for family medicine as a medical specialty."

Her professional interests are found in the analysis of medication safety, diagnostic errors, and the transitions of care. She is particularly interested in examining the working mechanisms involved in care transitions as well as the mechanisms that push interventions into outcomes. Outside of the research world, Dr. Zwart enjoys traveling, sailing, skiing, and ice speed skating. She loves going to art museums and is extremely fond of both ancient and modern art. Her husband and three children moved to the United States with her following her acceptance into the Harkness Fellowship Program, and so a considerable amount of her personal time is also spent with her family.

While the Harkness Fellowship Program assists its fellows in finding a university or institution for their research, Dr. Zwart was immediately drawn to work at the Center for Patient Safety Research and Practice here at the Brigham. She was already aware of the Center, as well as Dr. Bates, from previous publications, and after consideration of other institutions, she consciously chose to conduct her fellowship at the Center with Dr. Bates and Dr. Schnipper as her mentors. She also called the Center the "cradle of patient safety research," referring to the landmark Harvard Medical Practice Study that was performed here. Her care transitions project is still ongoing, but she is looking to publish the results once it is complete.

Looking back on her time as a Harkness Fellow, Dr. Zwart remarked on how this program has broadened her perspective of healthcare and care delivery. "The time I've spent at the Brigham so far has given me the opportunity to think more about healthcare systems, policy, and patient safety," Zwart comments. "Being in America has also exposed me to another medical culture, and I've learned so much about American science and society."

Dr. Zwart hopes to use the knowledge, experience, and connections that she has gained through the Harkness Fellowship Program to strengthen her patient safety research in the Netherlands. The project she is conducting with Dr. Schnipper and Dr. Bates will help her refine the Transitional Incident Prevention Program (TIPP), a care transition program in the Netherlands. TIPP is a study program that aims to improve transitional patient safety, develop measurement tools, and perform a study to test the effect of a combination of

(Continued on page 8)

Selected Publications by members of the Center

[National Rules for Drug-Drug Interactions: Are They Appropriate for Tertiary Hospitals?](#) Cho I, Lee JH, Choi J, Hwang H, Bates DW. J Korean Med Sci. 2016 Dec;31(12):1887-1896.

[User Requirements for a Chronic Kidney Disease Clinical Decision Support Tool to Promote Timely Referral.](#) Gulla J, Neri PM, Bates DW, Samal L. Int J Med Inform. 2017 May;101:50-57. Epub 2017 Feb 4.

[Orders on file but no labs drawn: investigation of machine and human errors caused by an interface idiosyncrasy.](#) Schreiber R, Sittig DF, Ash J, Wright A. J Am Med Inform Assoc. 2017 Feb 16. [Epub ahead of print]

[Learning from errors: analysis of medication order voiding in CPOE systems.](#) Kannampallil TG, Abraham J, Solotskaya A, Philip SG, Lambert BL, Schiff GD, Wright A, Galanter WL. J Am Med Inform Assoc. 2017 Feb 19. [Epub ahead of print]

[Evaluation of medication-related clinical decision support alert overrides in the intensive care unit.](#) Wong A, Amato MG, Seger DL, Slight SP, Beeler PE, Dykes PC, Fiskio JM, Silvers ER, Orav EJ, Eguale T, Bates DW. J Crit Care. 2017 Feb 20;39:156-161. [Epub ahead of print]

[Patients' and Care Partners' Perspectives on Dignity and Respect During Acute Care Hospitalization.](#) Gazarian PK, Morrison CR, Lehmann LS, Tamir O, Bates DW, Rozenblum R. J Patient Saf. 2017 Feb 22. [Epub ahead of print]

[Validating Fall Prevention Icons to Support Patient-Centered Education.](#) Leung WY, Adelman J, Bates DW, Businger A, Dykes JS, Ergai A, Hurley A, Katsulis Z, Khorasani S, Scanlan M, Schenkel L, Rai A, Dykes PC. J Patient Saf. 2017 Feb 22. [Epub ahead of print]

[Evaluating the Impact of Radio Frequency Identification Retained Surgical Instruments Tracking on Patient Safety: Literature Review.](#) Schnock KO, Biggs B, Fladger A, Bates DW, Rozenblum R. J Patient Saf. 2017 Feb 22. [Epub ahead of print]

[mHealth and Health Information Technology Tools for Diverse Patients with Diabetes.](#) Lyles CR, Ratana-wongsa N, Bolen SD, Samal L. J Diabetes Res. 2017;2017:1704917. Epub 2017 Feb 23.

[Review of Nonformulary Medication Approvals in an Academic Medical Center.](#) Her QL, Amato MG, Seger DL, Gilmore JF, Fanikos J, Fiskio JM, Bates DW. Jt Comm J Qual Patient Saf. 2017 Feb;43(2):89-96.

[The Impact of Information Culture on Patient Safety Outcomes. Development of a Structural Equation Model.](#) Jylhä V, Mikkonen S, Saranto K, Bates DW. Methods Inf Med. 2017 Mar 8;56(Open):e30-e38.

[30-Day Potentially Avoidable Readmissions Due to Adverse Drug Events.](#) Dalleur O, Beeler PE, Schnipper JL, Donzé J. J Patient Saf. 2017 Mar 17. [Epub ahead of print]

[Racial/ethnic differences in obesity and comorbidities between safety-net and non safety-net integrated health systems.](#) Balasubramanian BA, Garcia MP, Corley DA, Doubeni CA, Haas JS, Kamineni A, Quinn VP, Wernli K, Zheng Y, Skinner CS. Medicine (Baltimore). 2017 Mar;96(11):e6326.

[The Benefits and Challenges of an Interfaced Electronic Health Record and Laboratory Information System: Effects on Laboratory Processes.](#) Petrides AK, Bixho I, Goonan EM, Bates DW, Shaykevich S, Lipsitz SR, Landman AB, Tanasijevic MJ, Melanson SE. Arch Pathol Lab Med. 2017 Mar;141(3):410-417.

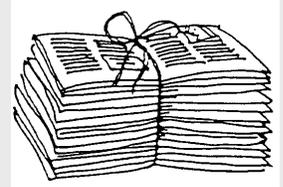
[Nurse, Patient, and Care Partner Perceptions of a Personalized Safety Plan Screensaver.](#) Duckworth M, Leung E, Fuller T, Espares J, Couture B, Chang F, Businger AC, Collins S, Dalal A, Fladger A, Schnipper JL, Schnock KO, Bates DW, Dykes PC. J Gerontol Nurs. 2017 Apr 1;43(4):15-22.

[Analysis of variations in the display of drug names in computerized prescriber-order-entry systems.](#) Quist AJ, Hickman TT, Amato MG, Volk LA, Salazar A, Robertson A, Wright A, Bates DW, Phansalkar S, Lambert BL, Schiff GD. Am J Health Syst Pharm. 2017 Apr 1;74(7):499-509.

[Automated detection of look-alike/sound-alike medication errors.](#) Rash-Foanio C, Galanter W, Bryson M, Falck S, Liu KL, Schiff GD, Vaida A, Lambert BL. Am J Health Syst Pharm. 2017 Apr 1;74(7):521-527.

[Primary care collaboration to improve diagnosis and screening for colorectal cancer.](#) Schiff GD, Bearden T, Hunt LS, et al. Jt Comm J Qual Patient Saf. 2017 Apr 19; [Epub ahead of print]

***This publication from Dr. Schiff is in the coveted top 3 of Weekly Highlights from AHRQ PSNet!



Take a look at
some recent
publications by
members of the
Center!



THE CENTER FOR
PATIENT SAFETY
RESEARCH AND
PRACTICE



TRANSFORMING
PATIENT CARE



RESEARCH AND
INNOVATION TO
IMPROVE QUALITY

Global Fellows Corner

(Continued from page 6)

interventions related to care transitions—the patients’ understanding, professionals’ mutual communication, safety culture, and care process improvements. Recognizing that the missing pieces in TIPP were the working mechanisms of care transition interventions, she has structured her research at the Center to find answers to her questions and fill in those gaps that may be hindering the potential of TIPP to succeed.

While Dr. Zwart’s time is limited by the year-long span of the program, she hopes to maintain relationships with her colleagues here at the Center and to foster ongoing collaborations with Dr. Bates and Dr. Schnipper even after her Harkness Fellowship ends.

The Center thanks Dr. Zwart for all she has contributed to date, and looks forward to her continued assistance in advancing patient safety for all.

Home Hospital

(Continued from page 4)

talization in their own homes while receiving the same quality care that they would while in-hospital. The “hospital at home” model is common in several other countries, but has not been rigorously studied in the United States. Levine’s project aims to examine the impact of providing care at home on cost, quality and safety of care, and patient experience as compared with traditional hospitalizations. The pilot was not powered to prove differences in these outcomes, but preliminary findings show large reductions in cost, quality and safety are maintained, and patient experience is improved. Dr. Levine’s work on the Home Hospital project is already gaining recognition. He recently received the Mack Lipkin Sr. Scientific Presentation Award from the Society of General Internal Medicine.

Dr. Levine and his team have faced a variety of barriers, but successfully worked on solutions and strategies to overcome them. There are high technology standards that must be, and are, met in the Home Hospital project, including point of care blood work, imaging, continuous oxygen, and remote monitoring of vital signs and activity levels. This project has to overcome the conception that the hospital is the best place for all patients to receive care. Key stakeholders must buy into some part of the hypothesis that home hospitals are a cost-effective model that provides the same levels of quality and safety, while also improving experience. It is a challenge for Dr. Levine and his team to recruit patients, but common concerns that many patients share are alleviated by the quality of care guarantee. Patients receive a secure tablet that allows them to reach the care team at any time, a safety check is performed at the home, meal deliveries can be scheduled and clinical services like physical therapy are available. Acute care home nurses visit patients a minimum of twice per day. Physicians visit at least once daily and are on-call 24/7. It was also a challenge to find these key personnel, but the Home Hospital project has overcome this barrier, too, by hiring staff interested in pursuing this innovative model of care.

The re-launch of the project at the end of May will include patients with a wider array of problems, which will allow for the study to continue assessing the impact of home hospital care on costs, patient satisfaction, safety and quality of care as compared with traditional hospitalization.



Brigham and Women’s Hospital
Center for Patient Safety Research and Practice
Division of General Internal Medicine and Primary Care
1620 Tremont Street
Boston, MA 02120-1613

Online at <http://patientsafetyresearch.org/>