

Abstracts of Poster and Oral Presentations

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Chair of the Scientific Program Committee: Dan Westphal, MD, MBA, FCCP, FACMQ



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Poster Presentations

Friday, April 12, 2019, 5:00 – 6:20pm

Poster Abstract 1

[T] The Association of Magnet Nursing Status with Hospital Performance on The Centers for Medicare and Medicaid Services Quality Metrics

5:00-5:06pm

Matthew Boylan, Helen Korolikova, Kelly Suchman, Joseph Bosco

NYULMC, New York, USA

Background: Magnet Recognition is the highest distinction a healthcare organization can receive for excellence in nursing. While Magnet status is generally associated with superior clinical outcomes and patient satisfaction, hospital performance on nationwide quality metrics in Magnet hospitals is currently unknown.

Methodology: We compared performance on the Hospital-Acquired Condition Reduction Program (HACRP), Hospital Value-Based Purchasing (VBP), and Hospital Readmissions Reduction Program (RRP) initiatives using The Centers for Medicare and Medicaid Services (CMS) 2017 Final Rule datasets. Of the 3,190 hospitals with qualifying data, 365 hospitals had received Magnet Recognition.

Results: The mean HACRP total performance score was inferior at Magnet versus non-Magnet hospitals (6.12 versus 5.06, $p < 0.001$), and HACRP penalties were more likely to be levied against Magnet hospitals (38.1% versus 22.0%, $p < 0.001$). The mean VBP performance score was inferior at Magnet hospitals (1.0025 versus 1.0004, $p < 0.001$), and Magnet hospitals were more likely to receive VBP penalties (46.3% versus 37.4%, $p = 0.001$). The mean RRP performance score was superior at Magnet hospitals (0.9939 versus 0.9952, $p < 0.001$), but Magnet hospitals were more likely to be penalized for excess readmissions (86.6% versus 80.6%, $p = 0.005$).

Conclusions: While Magnet hospitals are known for superior nursing care, this is not captured within CMS composite quality metrics, which can be influenced at many levels of care. While certain factors are nonmodifiable like patient population, this data underscores the need for comprehensive quality improvement across multiple domains of care outside of nursing.

Poster Abstract 2

[T] Radiology Consultation Service for Referring Clinicians

5:06-5:12pm

Leonard Ong, Alan Krauthamer, Roberta Locko, Usha Chundru
Harlem Hospital, New York, USA

Radiology consultation service for clinicians. Designing a solution for busy urban hospital to improve ordering accuracy.

Purpose: To establish a radiology consultation service for inpatient and outpatient clinicians to improve appropriateness of radiology studies ordered. It has been our experience that many clinicians have questions regarding the appropriate study to order but find it difficult to reach the appropriate subspecialty doctor to determine what type of studies to order and whether contrast is necessary. In addition, many clinicians have suggested that it is often difficult to reach a radiologist and having to go through multiple front desk personnel.

Methodology: We have proposed a system based on a centralized pager which is answered 24 hours a day - 7 days a week. The pager is carried by a senior level radiology resident. Outpatient clinicians and inpatient clinicians are provided with this universal pager number and are encouraged to reach out to the consultation service to answer any questions about ordering such as need for contrast, appropriate clinical criteria for ordering a particular study, radiation dosage questions, premedication questions, or any other clinical questions. The radiology resident in charge of the consultation service then answers the questions if it is within his/her expertise or otherwise directly refers the clinician to the appropriate subspecialty attending. We propose that a consultation service will limit unnecessary studies and streamline ordering. In addition, this will eliminate delays in performance of the study while trying to contact referring doctors to clarify orders.

Results: Preliminary feedback from clinicians indicates that there would be great support for a consultation service. Clinicians report having difficulty reaching a subspecialty radiologist and/or determining need for contrast and appropriate studies. The ACR appropriateness criteria will be followed. In addition, the information provided will be entered into the patient's electronic medical record.

Conclusions: A radiology consultation service would be of great use to referring doctor's both in the inpatient and outpatient setting to determine appropriate study criteria as well as usage of contrast according to ACR appropriateness criteria and integration into the patients' electronic medical record. The service will help to improve work flow and improve patient care as the radiologist is more involved in the ordering of appropriate studies by clinicians by making it easier to reach a radiologist 24 hours and day - 7 days a week.

Creating an LGBT-Affirming Environment: Provider and Staff Workshop

5:12-5:18pm

Tiffany Wandy, Daniel Durand, Sommer Gray, Susan Westgate
LifeBridge Health, Baltimore, USA

Purpose: Studies show that lesbian, gay, bisexual, and transgender populations, in addition to having the same basic health needs as the general population, experience health disparities and barriers related to sexual orientation and/or gender identity expression. Many avoid or delay care or receive inappropriate or inferior care because of perceived or real homophobia, biphobia, transphobia, and discrimination by health care providers and institutions.

Methodology: The following parameters drove our approach.

Goals: Conduct an initial mandatory one-hour training with at least 80% of the Radiology Department (both staff and providers) by the end of 2018
Conduct an initial optional one-hour training with at least 50% of the Radiology Department (both staff and providers) by the end of Q2 2019
Improve the Radiology Department's ability to provide high-quality care for LGBTQ patients by:
Increasing knowledge about LGBTQ health/social service needs, Increasing LGBTQ-affirming attitudes, Increasing LGBTQ-affirming behaviors, Develop and refine strategies that enable the Radiology Department to collect and utilize sexual orientation and gender identity data to improve health services and patient outcomes.

Objectives: By the end of the first training, participants will be able to identify at least three risk factors that contribute to LGBTQ disparities. By the end of the second training, participants will be able to enact at least two ways to affirm gender.

Results: In order to have a quantifiable way to measure the impact of the training sessions, we implemented a pre/post assessment. The assessments were identical and included a total of five questions, one of which was true/false and four that were open-ended. In the pre-assessment, participants correctly answered an average of 2.5 questions, incorrectly answered an average of 0.5 questions, and left blank an average of 2.0 questions. In the post-assessment, participants correctly answered an average of 4.1 questions (64% increase), incorrectly answered an average of 0.5 questions (no change), and left blank an average of 0.5 questions (75% decrease). Interestingly, the open-ended questions elicited much more comprehensive responses on the post-assessment; the average number of words used to answer the pre-assessment was 12, while the average number of words used to answer the post-assessment was 29 (142% increase).

Conclusions: Health care providers can take positive steps to promote the health of their LGBTQ patients by examining their practices, offices, policies, and staff training for ways to improve access to quality health care for LGBT people.

Participating in provider and staff training programs can give teams the tools necessary to create a welcoming environment for every patient who walks through the door.

[T] Risk Optimization Contributes to Widening Disparity Gap in Orthopedic Surgery

5:18-5:24pm

Claudette Lajam, Abigail Campbell, Afshin Anoushiravani, Chantel Gordon
NYU Langone Health, New York, USA

Purpose: Disparities have been recognized within many areas of healthcare. Value-based care has resulted in stricter optimization requirements for orthopedic surgical patients, which may result in decreased access to care for some patients. This study aims to evaluate surgical booking out of public insurance-based clinics at a large academic institution to identify trends in cancellation and/or delayed surgery.

Methodology: Six months of surgical cases were assessed booked from public insurance-based orthopedic subspecialty clinics. Patients who ultimately received surgery were compared to those whose surgery was cancelled. Cross sectional data was assessed for the groups and demographics were compared.

Results: There were 363 operative procedures scheduled over six months; 244 had surgery and 119 were cancelled. This yields a 32.8% cancellation rate, or 1 surgery performed for every 1.5 booked. Sixty-five of the 119 cancelled cases were never rescheduled (54.6% of cancellations, 17.9% of all booked cases). There wasn't significant difference in proportion of minority patients, English speaking status, or smoking status between the cohorts. Mean BMI was classified as obese in both groups but was not significantly different. The most common procedures cancelled were hip and knee arthroplasty. The most common zip code in patients whose surgery was performed was East Village. The majority of cancelled patients have zip codes in the outer boroughs of NYC. Most common reason for cancellation was preoperative clearance.

Conclusions: Despite our best efforts to assist the underserved population at a large urban academic medical center, there remains a high cancellation rate of elective surgeries, particularly arthroplasty, many of whom are lost to follow-up and never rescheduled. This may be a direct result of requirement for optimization, where the burden of treatment for medical comorbidities may be too difficult or daunting for many underserved patients and therefore excludes them from surgery. In the aim of providing value-based care, the quality of care provided is placed in question given our results. This study underlines the potential for lowering the quality of care if patients are being "cherry-picked" for operative cases or even dropped altogether from the elective surgery process.

[T] Building a Local Benchmark to Help Fluoroscopic-Guided Interventions providers Improve Their Clinical Practice's Radiation-Related Safety: Our Low-Cost Recipe for Evaluation and Comparison

5:24-5:30pm

Joon Yong Moon, Young Suk Kim, Andreea Dohatcu
University of Texas Medical Branch at Galveston, Galveston, USA

Purpose: A useful tool to improve quality and safety of patient care is the comparison of practice's performance measures to benchmarks. In fluoroscopic-guided interventions (FGI), exist several parameters that are convenient to monitor without interference with the clinical procedure. They can be collected manually in a digital log form or retrospectively by querying patient's electronic record databases. While both externally-built national registries and several commercial tracking software are available, there is still a need for alternative solutions that are easy-to-use, economical for potential users, buildable in-house and quick to analyze in order to output an individualized feedback for the FGI providers about their operator skills and application of x-ray dose-reduction practices, relative to their own local peers.

Methodology: FGI data logged since June 2015 to July 2018, from over 17000 cardiac catheterizations and cardiovascular-thoracic surgery cases; and from over 7000 vascular-interventional radiology and vascular surgery cases, were retrospectively analyzed using Microsoft-Excel™. Data recorded included: number of patients, ionizing radiation dose values (aka. exam cumulative-air-kerma (CAK)) and fluoroscopy beam-on-time, per procedure, per Body Mass index (BMI), and per body part; respectively per month for each FGI physician in the above-mentioned departments. The parameters BMI, body parts, and procedures were further grouped in up to 5 general categories for standardization. For each physician (31), we plotted several types of graphs: pie charts to see percentages of whole categories, scatter charts, line charts to visualize trends over time, and column charts to compare values across categories. Ultimately, composite graphs were plotted to compare several physicians' metrics at-a-glance.

Results: After reviewing all combinations we settled on:1) The pie charts that reveal which category each physician has worked the most with;2) The line charts that show, in which months, the practitioners were giving the highest total dose and total fluoroscopy time summed up from all exams -this helps identifying the months with highest beam-on dose and usage to further pinpoint the causes, tailor the corrective action, and present how much radiation each physician is exposed monthly relative to self's average or his group's median value-;3) Column charts of patients' number for the most used category plotted against all physicians that demonstrate which of the physicians are comparable with each other directly, without inherited data variability, for further identification of outliers; and4) The all-in-one graphs

that show the range of dose and fluoroscopy time values per physician for each of the three parameters' categories, this highlighting the provider(s) exceeding group's median values.

Conclusion: Our proposed design for building a local benchmark turns to be a promising low-cost peers-based feedback tool to improve FGI providers radiation-reduction skills.

Implementation of Lung Cancer Screening in a Southeastern Kentucky Community Health Center: A Quality Improvement Initiative

5:30-5:36pm

Will Miller, Seth Napier, Laura Lee Hall, Gregory Hood
Clover Fork Clinic, Lexington, USA, Clover Fork Clinic, Harlan, USA, Sustainable Healthy Communities, Washington, USA, Drs. Borders Hood and Associates, Lexington, USA

Purpose: Kentucky has the highest rate of lung cancer incidence and mortality in United States, with the southeast part of the state having the highest rates (114.1-179.7/1,000,000).

Methodology: The Clover Fork Clinics (CFC) in Harlan and Evarts, KY are federally-qualified health centers (FQHC) serving 4,253 people living in this Appalachia community in 2018. One-thousand and seven of the 4,253 patients served reported smoking, 24%. The U.S. Preventive Task Force (USPSTF) recommends annual screening for lung cancer with low-dose computed tomography (LDCT) in adults aged 55 to 80 years who have a 30 pack-year smoking history and currently smoke or have quit within the past 15 years. We joined a larger initiative involving 5 practices and 3 residency programs in eastern Kentucky, in collaboration with the national organization Sustainable Healthy Communities and funded by the Bristol-Myers Squibb Foundation. As part of this activity, we launched a quality improvement project using the Plan-Do-Study-Act (PDSA) approach to increase assessment of patients at risk and qualified for LDCT lung cancer screening, providing counseling and referral to eligible patients. An initial challenge, shared by all of the practices participating in the larger initiative, was identifying patients who fit the high-risk criteria from USPSTF in the MR. Our initial effort focused on building a customized template for identifying high risk patients, including CPT codes for counseling/screening (G0296/G0297), ICD codes for history and dependence (Z87.891/F17.2), and lung cancer screening code (CPT G0297). Baseline screening was only 3 percent of at-risk patient population.

Results: In our first cycle, we identified 57 patients eligible for LDCT lung cancer screening. Eight of the patients were successfully referred for screening, with only half (4) of them showing up for their appointment. Of those 4 patients, one had no or definitely benign nodules (Lung RADS 1) and 3 had probably benign findings (Lung RADS 3). The first PDSA cycle revealed challenges in successfully referring patients to screening. Our next steps include engagement with a lung

cancer screening navigator to increase successful referral and training of our staff on patient counseling, including shared decision-making.

Conclusion: Our experience reveals the challenges faced by small, highly taxed practices providing care in under-served and high-risk communities, including support for adapting the EMR to identify appropriate patient populations and assisting high-risk, impoverished and/or rural patients in successfully following through on a screening recommendation. The PDSA approach did help us improve our system's approach to helping at-risk patients by identifying gaps in our EMR and documentation of follow-up to referral.

Poster Abstract 7

[T] Improving Patient Safety Through Improvement of Resident Awareness Using the 'Good Catch' Strategy

5:36-5:42pm (joint time slot)

Michael Oriakhi, Charlene Sealy, Anya Weerasinghe, Raji Ayinla

Harlem Hospital, New York, USA

Introduction: Patient safety has always been an important aspect of healthcare. A Johns Hopkins study estimated that greater than 250,000 Americans die annually from medical errors and thus would be ranked as the third leading cause of death in the United States, after heart disease and cancer, on the Centers for Disease Control and Prevention (CDC) yearly. These errors go unrecognized because on death certificates, it's the primary diagnosis or complications that are listed as the cause of death. Collecting data/reporting of medical errors can elucidate the problem as this is a major patient safety issue. Medical doctors are often trained to report a potential medical error, or near-miss event. However, more often than not, these events go unreported. A 'Good Catch' is defined as an event or circumstance that has the potential to cause an incident or critical incident but did not actually occur due to corrective action and/or timely intervention. By sharing learnings, we can strengthen the patient safety culture and therefore create a safer system, reduce the number of incidents and adverse events. The aim of the project was to improve patient safety by reducing medical errors in the internal medicine department and mobilize medical residents to increase reporting of medical errors through the 'Good Catch' system. Methodology: We partnered with the administration, pharmacy department, patient safety department and infection control unit. We applied for a grant from the Committee of Interns and Residents (CIR)'s Patient Care Trust Fund. We distributed a pre-intervention survey to establish a baseline. We then formulated a cause-and-effect (Fishbone) diagram to identify potential limitations. We held monthly patient safety meetings where a keynote speaker was invited. During the first meeting, the project was introduced and residents were encouraged to report errors they encountered for a monthly 'Good Catch Award'. During the subsequent meetings, the keynote speaker educates on patient safety and quality improvement; the most interesting case is discussed and subsequently the most interesting case is given the 'Good Catch Award' for that month.

Results: Of the 50 residents that responded to the survey, 82% reported that they do not get enough teaching on the importance of patient safety. 22% reported that they have not made any errors since starting the program and 78% responded in the affirmative.

Conclusion: Simple but effective interventions had a high impact. We observed a steep rise in the compliance of medical errors reporting and patient safety culture among internal medicine residents. This was a successful pilot project to study the cost, effective and proficient methods that effect a sustainable change. The post-intervention survey results would be available at the time of presentation.

Poster Abstract 8

[T] Improving Patient Safety through Promotion of Effective Communication between Residents and Attending Physicians of the Internal Medicine Department of Harlem Hospital Center

5:36-5:42pm (joint time slot)

Michael Oriakhi, Charlene Sealy, Anya Weerasinghe, Raji Ayinla

Harlem Hospital, New York, USA

Background: Physicians in training comprise more than a quarter of the physicians who work in a teaching hospital and patients expect to receive safe, high-quality care in teaching hospitals. In the past, residency focused on individual knowledge, skills and responsibilities, and it is increasingly important that there should be improved collaboration between physicians in training and attending physicians as medical malpractice data indicate that resident physicians are frequently named in lawsuits, most often due to lack of supervision. There are several levels of supervision provided during residency as the expectation, in most cases, is that "Residents should run the teams" and have some level of autonomy in making patient care decisions. However, it has been shown that residents and attending physicians often have diverging opinions on which clinical situations require supervision and the level of supervision required in these situations. Harlem Hospital is a community hospital affiliated with Columbia University Medical Center. The Internal Medicine program is a 75-resident program and in this study we aimed to highlight the differing opinions on the need for supervision between residents and attendings. We also strive to highlight the ambiguity in which certain statements, made by attendings, are interpreted by residents as these differences have the potential to impact patient safety and quality of care.

Methodology: The department of quality management and patient safety granted approval for the quality improvement project as required by the hospital policy. We partnered with residents from the internal medicine program, hospital administration and attending physicians. Resident and attending physicians, including hospitalists and subspecialty attendings in Internal Medicine were surveyed separately about current practices regarding supervision in the different units: medical floors, intensive care unit and cardiac care units

[T] Not to Eat: Improvement of Meal Delivery at an Academic Hospital**5:48-5:54pm**

Michael Jin, Catherine Wang, Steven Jin, Lance Flesher, Rebecca Dougherty

Donald and Barbara Zucker School of Medicine at Hofstra/Northwell, Hempstead, USA, Saint Louis College of Pharmacy, Saint Louis, USA, University of New Mexico, Albuquerque, USA

Purpose: Patients must be made non-per oral (NPO; prohibited from eating) in preparation for anesthesia due to risk of aspiration and patient morbidity. If these patients consume food, treatments can be delayed, increasing healthcare costs. Even if patients are instructed to not eat, many consume food if meals are delivered to bedside. Additionally, patients can have allergic reactions to foods or dietary restrictions from religious/social beliefs. Unfortunately, mistakes in meal delivery are not uncommon at many hospitals, including at our institution. Our study seeks to (1) identify frequency and causes of incorrect meal deliveries, (2) initiate appropriate interventions, (3) and evaluate the effects of our interventions.

Methodology: Three categories of meal delivery error were identified: 1) NPO patient receiving any meal tray, 2) patient with an allergy-related dietary need receiving incorrect tray, and 3) patient with non-allergy dietary need (eg. kosher or vegetarian diet) receiving incorrect tray. 20 nurses from two hospital floors were surveyed on the frequency of each meal delivery error type within the last month. Questions were restricted to patients in direct care of each nurse during the nurse's shift. Additionally, data was collected on whether meal error was due to accidental delivery of another patient's tray. Follow-up investigation was conducted on the meal delivery process at our facility, from placement of meal orders by physicians to delivery of meals to patients. IBM SPSS Statistics was used for data analysis.

Results: 8 responses out of 20 (40%) were received for pre-intervention survey. Two nurses reported 5 total patients received meals while NPO. Four nurses reported 11 total patients with allergy related dietary needs received incorrect trays. Five nurses reported 41 total patients with non-allergy related dietary needs received incorrect trays. Nine patients in the non-allergy related dietary need group received another patient's tray. From observations, we discovered multiple dietary team members did not follow protocol by confirming patient identity with patient identification wristbands when delivering meals. Additionally, the dietary team finalizes meal orders at 11:00 AM. However, resident physicians often update meal orders after morning rounds, past 11:00 AM. Thus, dietary team may not receive updates before meal delivery. We identified two areas of intervention: (1) create an education session for dietary team to review proper Joint Commission mandated patient identification protocol. (2) initiate daily pre-meal meeting between dietary team members and floor unit receptionists to communicate last-minute meal delivery changes prior to delivery.

respectively. Both groups responded to questions regarding clinical scenarios that involved patient safety concerns. Both full time and locum physicians were included in the study.

Results: Preliminary results showed that the residents most of the residents are uncomfortable calling their supervising attending during emergency situations. The commonest limitation highlighted was the fear of being perceived as incompetent.

Conclusion: Improved communication between residents and their supervising attending would improve patient care and promote favorable outcome while increasing residents training and eventual autonomy. Going forward, we plan to organize a noon conference involving attending physicians and residents to discuss our findings and highlight best practices including simulation of scenarios. List of common emergency situations where a resident should inform their supervising attendings would be placed in the different units and medical floors.

Poster Abstract 9

[T] Improving Blood Culture Techniques to Minimize Contamination and Increase Positive Yield**5:42-5:48pm**Yamin Soe-Htwe, Michelle Thomas, Vel Sivapalan
Harlem Hospital Center, New York, USA

Abstract: Blood cultures are one of the most instrumental investigations that are available to the medical profession in diagnosing patients with bacteremia. They are widely done in the emergency department and on the medical floor when there is a high suspicion of sepsis. If proper techniques are not followed the high rate of contamination and false negative results not only hamper patient care and safety but it also becomes cost ineffective. This quality improvement project was aimed at how we could minimize contamination and increase positive yield.

Methodology: We developed a questionnaire for the Internal Medicine resident body (72) at the beginning of the academic year to get a better understanding of their knowledge on blood cultures techniques, timing of the cultures and volumes of blood needed. Mid academic year, the data collected was presented to the resident body and evidence base literature on every aspect of the questionnaire was also presented. The resident body will be given the same questionnaire at the end of the academic year for comparison.

Anticipated Results: The resident body will be educated on the importance of adhering to proper blood culture techniques resulting in decreased contamination and increased positive yield.

Conclusion: Our results identified a significant baseline number of meal delivery errors as well as two areas for intervention to reduce error rates, both of which have been initiated. A follow-up survey will be conducted in the future to assess for the effectiveness of our interventions in the coming months.

Poster Abstract 11

[T] Understanding Patterns of Frequent Emergency Department Use Over Time and Resource Utilization

5:54-6:00pm

Viet Phan, Mallory Owns, Emily Kuo, Alejandro Cardenas, Neil Tank, Kevin Li, Rania Habal, Hossein Kalantari, Getaw Worku Hassen
NYCHHC Metropolitan Hospital, New York, USA

Purpose: Diminishing resources and growing health problems with overcrowding have drawn attention to frequent users. Health care expenditure is also a growing problem. Over the past two decades, diminishing resources and growing problems with overcrowding have drawn attention to frequent users of emergency departments (EDs), a small group of patients who visit the ED more often than most patients. Previous studies have found that frequent users are more likely to be admitted to the hospital, cost the system more are more likely to be homeless, and often have mental health and substance abuse issues. Past studies have also found that this is a heterogeneous group, with many different factors often contributing to frequent use of the ED, and that single patients within this group can use up significant time and resources at a single ED. The objective in this research is to examine the patterns of frequent emergency department (ED) use of an urban hospital, and to determine the patient characteristics that predict the likelihood of repeated visits as well as resource utilization due to repeated visits.

Methodology: This research used Retrospective chart reviews from Jan 2012 – Dec 2014 at a single, urban hospital. Patients were included as a frequent user if they had 4 or more visits within any 12-month period. Diagnosis was coded for all patients using the ICD-10 major codes. A multivariate logistic regression was performed to examine likelihood of a repeated visit within 7 days of a previous visit. The number of imaging studies and laboratory tests were reviewed during the year of the visit.

Results: This research found that Frequent users who were male, had a history of mental health or substance abuse issues, and who left without being seen were more likely to have repeat and clustered visits. Repeated imaging and laboratory tests were performed as a result of repeated visits. Teamwork based interventions to identify and proactively treat this subgroup of patients could help reduce the number of repeated, clustered visits among frequent users.

Poster Abstract 12

[T] Choosing Wisely – Improving the Appropriateness of Lumbosacral Spine CT Orders in the Emergency Department

6:00-6:06pm

Zi Zhang, Leonard Ong, Xie Yuanyuan, Alan Krauthamer, Leszek Pisinski, Roberta Locko
Harlem Hospital, New York, USA

Background: Choosing Wisely is an initiative of the ABIM Foundation that seeks to advance a national dialogue on the utilization of appropriate imaging procedures for clinical diagnoses and avoiding unnecessary medical tests, treatments and procedures. Low back pain without trauma is a common presenting complaint in the emergency department (ED). Majority of cases are related to muscle strain or inflammation. The aim of our study is to evaluate whether the order for a lumbosacral spine CT in the ED follows the recommendations of American College of Emergency Physicians (ACEP) for imaging of non-traumatic back pain as well as to assess if appropriate clinical information was provided for the radiologists in the request for the study. Moreover, we investigated whether physician education can improve the appropriateness of lumbosacral spine CT requests submitted in the ED.

Methods: Lumbosacral spine CT scans ordered by emergency physicians from the fourth quarter of 2016 to the fourth quarter 2018 were reviewed by the neuroradiologist. At the end of the third quarter of 2017, ED physician education and radiology resident education were implemented to improve the appropriateness of lumbosacral spine CT orders. The format of physician education including conference presentations and individual training.

Results: The number of lumbosacral spine CT scans ordered from the fourth quarter of 2016 to the third quarter of 2017 were 51, 45, 37, and 58 by quarter respectively. During the same time period, the baseline appropriateness of lumbosacral spine CT orders originating from ED were 56.86%, 55.56%, 54.05% and 58.62% respectively, and the accuracy of the clinical information provided on the orders were 82.35%, 82.22%, 83.78%, and 84.48% respectively. After the physician education intervention, the number of lumbosacral spine CT scans ordered from the 4th quarter of 2017 to fourth quarters of 2018 were 57, 52, 48, 47, and 48 respectively. During the same time period, the appropriateness of lumbosacral spine CT orders improved to 73.68%, 65.38%, 70.83%, 72.34% and 72.92% respectively, and the accuracy of the clinical information slightly improved to 89.47%, 84.62%, 81.25%, 76.60% and 89.58% respectively.

Conclusion: Physician education via conference presentations and individual training can improve the appropriateness of lumbosacral spine CT orders in the ED with the ultimate goal of improving care, reducing ionizing radiation exposure and reducing unnecessary healthcare costs. More results will be presented as data is gathered.

[T] Application of LEAN Methodology Reveals Patient Modifiable Factors To Be The Prime Source of Delay in “First Start” Cases

6:06-6:12pm

Srikanth Kurapati, Ali Kilic, Jorge de la Torre
University of Alabama Birmingham, Birmingham, USA

Purpose: Surgical care represents one of the greatest sources of revenue and cost in healthcare. Increasing surgical throughput offers the benefits of simultaneously expanding profit margins while increasing patient satisfaction. Cima et al in 2011 demonstrated LEAN strategies can be extremely effective in reducing waste and increasing efficiency in the operating room (OR). The purpose of this project is to demonstrate the utility of applying LEAN philosophy to the process of OR scheduling.

Methodology: This study represents scheduling data gathered from a single institution’s OR scheduling times. “First starts” are defined as surgeries scheduled as the first case in a particular operating room. Surgeon “call in” is the surgeon notifying the OR staff he or she is in the building. Data gathered represents 238 scheduled first starts over 1 year. Included were all surgical specialties with first start times. Delays in “first start” cases were attributed to one of the following: “2nd Room” (start time intentionally staggered to allow for two simultaneous cases with first start times) “Anesthesia related” (such as nerve blocks causing delay, or delay in anesthesia pre-operative evaluation), “Patient Modifiable Delay” (such as patient not having ride, not going to pre-op clinic as previously instructed, or patient arriving late), “Patient Non-modifiable Delay” (patient acutely ill on day of surgery), “Surgeon Modifiable Delay” (surgeon not calling in, surgeon late for arrival, office mis-scheduling, or industry rep late with necessary equipment), “Surgeon Non-modifiable Delay (one surgeon helping another due to acutely decompensated patient), or “unknown” (no reason listed for delay). Once data was gathered, a statistical analysis was performed.

Results: The surgeon “calling in” was weakly associated with on-time starts ($r=0.18$). The surgeon “calling in” did not relate to all-cause delays ($r=-0.04$). Moreover, the greatest delays were caused by Patient Modifiable Factors (mean 35mins, Stdev 25mins). Additionally, 80% of delays were caused by Patient Modifiable factors.

Conclusions: Variability represents the most significant threat to OR scheduling efficiency. Steps to reduce variability lead to reduction in waste and increase in throughput. By focusing proactively on delays attributed to Patient Modifiable Factors, one source of waste can be eliminated. Future intervention will focus on modifying these factors in the preoperative setting. For example, additional reminders can be built in to the scheduling system to remind patients they will need a ride, be NPO, or to attend their pre-op Anesthesia appointment. Another intervention could be to require Pre-op Anesthesia appointment the same day as surgery scheduling

appointment. Continuing to cull waste in surgical scheduling will result in noticeable gains in making surgical care economically sustainable while enhancing quality.

[T] Viewing Hand Hygiene Through the Lens of the LEAN Production Model Can Improve Hand Hygiene Compliance

6:12-6:18pm

Srikanth Kurapati, Samir Awad
University of Alabama Birmingham, Birmingham, USA, Michael E Debaquey Veterans Affairs Medical System, Houston, USA, Baylor College of Medicine, Houston, USA

Purpose: In the United States, nearly 2million patients get a Hospital Acquired Infection (HAI) and about 90,000 of these patients die as a result. Clean hands are the SINGLE most important factor in preventing the spread of pathogens and antibiotic resistance in healthcare settings. However, national estimates reveal at best 50% of healthcare practitioners are properly compliant in hand hygiene techniques. Furthermore, the cost burden of poor compliance is significant, with attributable costs ranging from \$3,500 to \$40,000 per survivor, depending on severity of infection. However, the cost of hand hygiene products per patient per day is often less than \$1. The LEAN production model has been used in other industries to effectively analyze shortcomings and improve quality. The purpose of this quality improvement (QI) initiative is to apply LEAN methodology to hand hygiene in an effort to study and improve compliance.

Methodology: This QI project represents a single center’s initiative on improving hand hygiene compliance specific to surgical care units. A multidisciplinary team of physicians, nurses, and administrators convened to apply LEAN methodologies including but not limited to: process flow maps, spaghetti diagrams, Pareto analysis, Ishikawa maps, root cause analysis, and effort-impact matrices to empower two Plan-Do-Study-Act (PDSA) cycles.

Results: Spaghetti diagram and process flow analysis revealed neglect in training and compliance education in non-patient-care providers. Pareto analysis revealed “distraction” and misconception of “not directly touching the patient” as the most commonly cited reasons for poor compliance. Root Cause Analysis revealed poor Situational Awareness as the underlying thread weaving the factors for poor compliance. As a result of these insights, two PDSA cycles led to an improvement of hand hygiene compliance from 75% to 80% and 87% respectively over the course of six months.

Conclusions: While LEAN methodology was not initially intended to address patient safety issues, its core philosophies can be translated to detect gaps in healthcare. Successful use of LEAN techniques in areas like hand hygiene compliance can provide structure for identifying defects in an otherwise nebulous and multifaceted problem. Viewing hand hygiene through the lens of a production model results in valuable insights and can be used to empower successful quality improvement.

References:

1. Stone, P. W., Hasan, S., Quiros, et al. (2007). *Effect of Guideline Implementation on Costs of Hand Hygiene*.
2. Nursing Economics, 25(5), 279–284. *WHO Guidelines on Hand Hygiene in Health Care: First Global Patient Safety Challenge Clean Care Is Safer Care*.
3. Geneva: World Health Organization; 2009. *Assessing the economic impact of hand hygiene promotion*. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK143995/>

Oral Presentations

Saturday, April 13, 2019, 1:30 – 3:30pm

Oral Abstract 1

[T] Patient Satisfaction Surveys for Inpatient Orthopedic Care: A Critical Look at Result Reporting and Drivers of Satisfaction

1:30-1:45pm

Dennis Vazquez-Montes, Robert Freitag, Peter Zhou, Akhila Sure, John Moon, Lorraine Hutzler, Joseph Bosco, Thomas Errico, Kenneth Egol, Richard Iorio, Themistocles Protosaltis, Charla Fischer, Joseph Zuckerman, Aaron Buckland
NYULMC, New York, USA

Introduction: The Centers of Medicare and Medicaid Services (CMS) is shifting to a value-based provider reimbursement model. Under this model, hospitals and physicians are rewarded on quality, not quantity. A key determinant of quality is the patient experience. However, the drivers of patient satisfaction in Orthopedic care remain unknown, and the method of satisfaction score reporting, Top Box Percentages (TB%), may not be statistically accurate. This study aims to assess the sensitivity to detecting change between TB% and calculated average scores in the Satisfied Patient Index (SPI). Additionally, to analyze the influence of satisfaction domains on patient satisfaction ratings among Orthopedic sub-specialties in the inpatient setting.

Methods: A retrospective review of prospectively collected inpatient de-identified Press Ganey (PG) survey data from a single orthopedic institution from 2013 to 2015. Respondents were identified and grouped by time period and Diagnosis-Related Group (DRG) codes indicating inpatient spine, adult reconstruction, and trauma procedures. Ability to detect statistically significant change between TB% and SPI was calculated by conducting t-tests between years solving for mean differences until a significance level of $\alpha < 0.05$ was reached. Additionally, Pearson bivariate correlations were performed between HCAHPS domains and hospital ratings (HR) and a higher likelihood to recommend the hospital (LTR).

Results: 4589 inpatient survey respondents were identified including the following: SPINE 1635 (32.4%), RECON 2838 (56.3%), and TRAUMA 571 (11.3%). 1973 (43%) of the survey respondents were male and 2616 (57%) of the survey respondents were female, with an average age of 62 +/- 12.5. Overall, the minimum value for a significant detectable difference in SPI scores were found to be lower for TB%

scores across all specialties and all three years by a factor of 3.03 and 2.09 between years for HR and LTR respectively. Communication with Nurses, Care Transitions, Communication with Doctors, and Hospital Environment were the domains found to be the most significant drivers of patient satisfaction. The level of importance of each domain differed across orthopedic sub-specialties.

Conclusion: The Satisfied Patient Index is a more precise metric to detect significant change in satisfaction scores year-to-year than Top-Box% (TB%) in all three orthopedic domains. The drivers of patient satisfaction as measured by LTR and HR differed among subspecialties, however Communication with Nurses remained important across all. Given the increasing integration of patient satisfaction with reimbursement in the health care system, this study presents an alternative to TB% that may improve analysis and reporting of satisfaction metrics.

Oral Abstract 2

IRIS: An Approach to Aligning Fee-for-Service Payment with Value-based Care Models for Non-Dilated Point-of-Care Retinal Screenings for Patients with Diabetes

1:45-2:00pm

Tiffany Wandy, Daniel J. Durand
LifeBridge Health, Baltimore, USA

Purpose: The LifeBridge Health Accountable Care Organization (ACO) serves approximately 18,000 Medicare beneficiaries, many of whom have Type I or Type II diabetes. Like other ACOs across the nation, LifeBridge struggled with low compliance rates for diabetic retinopathy exams, with adherence typically hovering around 50%. Primary care providers were diligent with providing patients with referrals to ophthalmologists, but many patients were simply not following through. This lack of follow through was due to a number of challenges and barriers, including patient understanding about risk, the burdens involved in additional doctor visits for patients who were already under the care of multiple physicians, the costs associated with specialty care, obstacles to access care, and the confusing nature of today's insurance environment. This care gap is both clinically and financially detrimental. Clinically, patients had pathologies that were undiagnosed, preventing our system from providing interventional care. Nationwide, diabetic retinopathy is the leading cause of blindness in working age adults. Financially, LifeBridge is hurt by not maximizing quality scores across various pay for performance programs, including the Medicare Shared Savings Program.

Methodology: Understanding that diagnosed diabetic retinopathy provides primary care physicians with a new level of information to help manage and treat patients with diabetes and knowing that easy access to this diagnostic exam is best for patient care, LifeBridge sought a solution that was easy for our physicians and clinic teams to use. IRIS (Intelligent Retinal Imaging Systems) was identified as the vendor of choice. A pilot was initiated at three large primary care practice locations in the last quarter of 2017. Working

with a dedicated LifeBridge IRIS team, the sites created and implemented workflows, documented processes, and instilled best practices.

Results: Across the three sites, 678 patients have been screened for diabetic retinopathy. Of these 678 patients, 34% (239 patients) were diagnosed with pathology. Approximately 14% (101 patients) were diagnosed with diabetic retinopathy. We have also identified 69 patients who are considered “IRIS saves,” patients who had pathology identified that was serious enough to put them at imminent risk of losing their sight. For all patients requiring follow up, direct referrals were made to our in-network ophthalmologists at Krieger Eye Institute for treatment that these patients would not have otherwise received.

Conclusion: The introduction of the IRIS screenings at these three offices allowed our primary care providers to provide more comprehensive care to their patients with diabetes, eliminating the need for multiple appointments and office visits. As a result, PCPs, with IRIS, helped facilitate access to care, thus making it easier for patients to do the right thing for their health.

Oral Abstract 3

Improving Colorectal Cancer Screening Rates and Quality Metrics with the Multitarget Stool DNA System

2:00-2:15pm

Emily Weiser, Philip Parks, Rebecca Swartz, Jack Van Thomme, Paul Limburg, Barry Berger
Exact Sciences Corporation, Madison, USA, Harvard School of Public Health, Cambridge, USA, Mayo Clinic, Rochester, USA

Purpose: We report the potential effects of the multitarget stool DNA (mt-sDNA) test on improving colorectal cancer (CRC) screening after four years. Through September 2018, over 130,000 healthcare providers have ordered the mt-sDNA test, with over 1.56 million tests completed. The FDA-approved mt-sDNA is a safe, effective, patient-centered test to screen average-risk individuals ages 50 and older for CRC and pre-malignant polyps. Mt-sDNA is supported by 24/7 nationwide patient navigation (compliance program) and recommended with a 3-year screening interval for HEDIS and Stars quality credit. While CRC is the third most commonly diagnosed cancer in the U.S.¹ and CRC screening is an important component of quality measures, screening rates remain below the National Colorectal Cancer Roundtable goal of 80% by 2018.

Methodology: We measured patient compliance, patient-reported prior screening history, and patient and healthcare provider satisfaction with mt-sDNA. Compliance was defined as completion of the test (positive or negative result) within 365 days of order date for orders placed September 1, 2016-August 31, 2017. Phone surveys were conducted monthly on a random sample of patients shortly after successful completion of mt-sDNA testing (n=4752) to obtain CRC screening history and satisfaction rates. Healthcare provider

satisfaction was based on responses (n=300) to a double-blinded survey conducted by a third-party market research vendor (ZS Associates, Evanston, IL).

Results: Compliance with mt-sDNA screening was 64%, with 42% of screened individuals reporting they had never been screened for CRC prior to using the mt-sDNA test. Therefore, approximately 655,200 individuals were screened for the first time using the mt-sDNA test. Overall, 96% of providers reported their experience with mt-sDNA met or exceeded their expectations, and 88% of patients rated their experience as very positive.

Conclusions: CRC screening compliance with the mt-sDNA test was higher than published compliance rates reported with other stool-based CRC screening modalities^{2,3} and screening colonoscopy.⁴ This suggests that a non-invasive, home-based option such as the mt-sDNA test with its built-in patient navigation system to support compliance, is favorably received by both patients and providers. The mt-sDNA system has the potential to increase CRC screening rates; improve quality metrics for health systems, healthcare provider groups, and payers; and contribute to national screening goals.

References:

1. American Cancer Society. *Cancer Facts and Figures 2017*. 2017. Gellad ZF, Stechuchak KM, Fisher DA, et al. Longitudinal adherence to fecal occult blood testing impacts colorectal cancer screening quality. *Am J Gastroenterol* 2011; 106:1125-34.
2. Jensen CD, Corley DA, Quinn VP et al. *Fecal immunochemical test program performance over 4 rounds of annual screenings: a retrospective cohort study*. *Ann Intern Med*.2016;164(7):456-63.
3. Inadomi JM, Vijan S, Janz NK et al. *Adherence to colorectal cancer screening: a randomized clinical trial of competing strategies*. *Arch Intern Med*.2012;172(7):575-82.

Oral Abstract 4

A Quality Improvement Initiative to Reduce Low-Value PET/CT Use in Hospitalized Patients

2:15-2:30pm

Richard Elias, Deanne Kashiwagi, Christopher Lau, Stephanie Hansel
Mayo Clinic, Rochester, USA

Purpose: Reduction in low-value PET/CT studies performed on hospital inpatients.

Methodology: Clinical groups driving most of the medical PET/CT volume at our institution were consulted to compile a list of low-value indications in the hospital setting. The list was vetted with Nuclear Medicine leadership. Nuclear Medicine schedulers reviewed all PET/CT orders. If an order was received with a low-value indication, they contacted the ordering provider and instructed them to discontinue the order and call the Nuclear Medicine radiologist to discuss the case. If the radiologist approved the testing, the order was re-submitted with a note stating the approving radiologist's name. A retrospective review was conducted of cases approximately 2-years immediately prior to and following the implementation of this initiative to determine whether

it had reduced the volume of low-value inpatient PET/CT studies, effect on total inpatient PET/CT volume and overall indications for PET/CT performed in hospital.

Results: The estimate prior to implementation was for 0.75 PET/CT requests to require screening per day. The actual per day rate of screened study requests was 0.46. During the intervention period, 46% of inpatient PET/CT orders were screened. There was a 20.6% decrease in completed scans for the low-value indications following the intervention, from 0.397 to 0.315 studies per day ($p < 0.05$; CI -0.158 to -0.005). There was a 22.4% reduction in the overall daily PET/CT rate with 0.3 less inpatient PET/CT performed at the institution each day. Some targeted indications showed particularly marked reductions in volumes; Multiple Myeloma decreased 85% (pre: 20, post: 3). Of the 12 low-value indications, 7 demonstrated reductions in volume (aggregate 43 less scans), 1 was unchanged and 4 showed an increase in scan volume (aggregate of 10 additional scans). Interestingly, several common indications for inpatient PET/CT that were not targeted for reduction by this intervention demonstrated large decreases in PET/CT volume in the intervention period ("Metastatic Disease" 63 to 27 scans, 57% decline; "Lymphoma" 120 to 78 scans, 35% decline; "Occult Infection" 13 to 2 scans, 85% decline).

Conclusions: A quality improvement initiative aimed at reducing the number of low-value inpatient PET/CT scans did result in decreased PET/CT volumes for the targeted indications. A decrease in PET/CT volume for indications not specifically targeted by this intervention is also potentially attributable to greater ordering clinician awareness regarding PET/CT value and limitations.

References: Smith-Bindman R, Miglioretti DL, Johnson E, et al. *Use of diagnostic imaging studies and associated radiation exposure for patients enrolled in large integrated health care systems, 1996-2010.* JAMA. 2012;307(22):2400-2409.

Oral Abstract 5

[T] Improving Access and Timeliness to Surgery for Patients with Breast Cancer: A Lean Approach to Problem Solving

2:30-2:45pm

Stephanie K. Serres, Ross W. Simon, Tejas Mehta, Olga R. Augustus, April Isaac, Dorothy Sarno, Elena Canacari, Jim Conklin, Jennifer Diaz Soto, Tara Harmon, Catherine Kilroy, Nancy Littlehale, Ted A. James
Beth Israel Deaconess Medical Center, Boston, USA

Purpose: Timeliness of care is recognized as an important quality metric. Delays in surgery contribute to patient dissatisfaction and may also lower survival among patients with breast cancer. Given challenges in coordinating care, there is a need to optimize efficiency to ensure timeliness. The goal of this study was to achieve a consistent time frame of 30-days or less from initial surgical consultation to date of surgery.

Methodology: Patients undergoing breast conservation surgery as initial treatment were identified. A multidisciplinary team used Lean Management Principles to address treatment delay and develop systems to streamline patient access and scheduling. Actionable items were identified and implemented from 07/2017 to 02/2018. A quality metric reporting system was developed to identify surgical cases exceeding the 30-day target.

Results: At baseline (6/2017) the system detected at least one or more surgical cases exceeding the 30-day time frame. With implementation of the performance improvement pathways, during the first 3 months of the quality initiative there continued to be at least one case exceeding the 30-day time frame. Beginning in month 4 (10/2017) and for the duration of the months observed, all cases were completed within the 30-day window. **Conclusions:** Multidisciplinary teams working collaboratively using a structured quality improvement process improved timeliness of care in breast cancer surgery. Developing shared metrics, specific performance improvement pathways, and a quality reporting system were key components to success. Lean Management Principles can be utilized to address hospital systems to streamline access and scheduling and improve outcomes for patients with breast cancer.

Oral Abstract 6

[T] Impacting Knowledge and Utilization of Low-Dose Lung CT in Screening Eligible Patients

2:45-3:00pm

Travis Massengale, Jonathan Walrath, Joseph Weigel, Laura Lee Hall, Gregory Hood
Lake Cumberland Regional Hospital, Somerset, USA, Sustainable Healthy Communities, Washington, USA, Drs. Borders, Hood and Associates, Lexington, USA

Background: Effective use of LDLCT has been shown to reduce mortality by as much as 20% when applied in screening eligible patients. Across the United States, the average Low-Dose Lung CT (LDLCT) screening rate is below 2%. These rates lag far behind similar screening examinations such as mammography and colonoscopy. Rural Kentucky continues to be among the highest areas in the nation for smoking rates and lung cancer prevalence which necessitates appropriate LDCT use.

Objective/Purpose: This resident lead quality-improvement (QI) project aimed to increase the number of LDLCT's ordered in a multi-clinician outpatient practice over a 6-month period by assessing baseline clinician LDLCT knowledge and intervening to increase indication awareness.

Methods: We assessed baseline clinician knowledge about current LDLCT screening guidelines before intervention using that data to target areas of improvement. Phase 1: Assessment of baseline knowledge via clinician survey. Phase 2: Dissemination of current screening guidelines and current clinician LDLCT ordering totals. Phase 3: Clinic-wide meeting with presentation by a lung cancer screening expert who provided indications for screening and techniques to

help clinicians effectively utilize LDLCT. We assessed the effectiveness of our intervention using individual clinician ordering patterns, changes in survey data, and total change in screening volume.

Results/Outcomes: Prior to the intervention, the practice had obtained an average of 13 LDCT scans per month from January to August (2018) and was projected to have a cumulative increase of 14% compared to the previous year. Following our interventions, the practice has averaged 46 completed LDCT scans per month (September-December) with a current calculated increase of 73% from the previous year.

Conclusions/Sustainability: We successfully intervened among outpatient clinicians to significantly increase ordering of screening LDLCT's in eligible patients. Given recent improvements, we are working with clinic and hospital leaders to plan ongoing interventions to further increase our screening rates in the coming year and screening navigator to increase successful referral and training of our staff on patient counseling, including shared decision-making. Our experience reveals the challenges faced by small, highly taxed practices providing care in under-served and high-risk communities, including support for adapting the EMR to identify appropriate patient populations and assisting high-risk, impoverished and/or rural patients in successfully following through on a screening recommendation. The PDSA approach did help us improve our system's approach to helping at-risk patients by identifying gaps in our EMR and documentation of follow-up to referral.

Oral Abstract 7

[T] Integrating Quality Measurement into a Just-in-Time Training App to Create an All-in-One QI Solution for Frontline Healthcare Teams

3:00-3:15pm

Mary Han, Margaret Richmond, Jennifer Schwehm, Amanda Lucas, Briana Besen, Anna Konstantin, Arup Roy-Burman
University of California, San Francisco, San Francisco, USA, Elemeno Health, Oakland, USA, Children's Hospital New Orleans, New Orleans, USA, UCSF Benioff Children's Hospital Oakland, Oakland, USA

Purpose: Observation and education, cornerstones of quality improvement (QI), are challenging to scale. Paper-based audits are difficult to distribute, and manual transcription into spreadsheets is time-consuming. Analysis lags, leading to delays in identifying and addressing performance gaps. Furthermore, quality measurement and staff training are generally managed by different leadership. Interdisciplinary and team-based interventions are effective, especially when incorporating staff feedback¹. We sought to develop a scalable system supporting rapid iteration of audits, paired with timely frontline distribution of results and actionable training.

Methodology: We developed cloud-based audit management and delivery tools for an existing just-in-time training app supporting adoption of organizational best practices

(Elemeno Health, Oakland, CA). At Children's Hospital New Orleans (CHNOLA) and UCSF Benioff Children's Hospital Oakland (BCHO), we transformed paper-based auditing into a mobile-friendly digital process. The system was deployed in the CHNOLA cardiac intensive care unit (ICU) to address multiple hospital-acquired conditions (HAC), and in the BCHO pediatric ICU, followed by expansion to 5 additional inpatient units, to address central line-associated bloodstream infection (CLABSI). Previously didactic and paper-based CLABSI training at BCHO was converted into microlearning content. Regular management and user feedback regarding the auditing process allowed rapid iterative development to increase usability.

Results: Auditors and educators digitally distributed standardized audits and training materials across all 7 units. With digitization of 16 different HAC audits and the elimination of manual data entry and analysis, the CHNOLA cardiac ICU completed an average of 148 audits/month. At BCHO, managers and staff completed an average of 122 CLABSI audits/month; auditors saved 8+ hours/week of transcription time. With capacity increased, the team expanded from 2 to 6 auditors. Managers were able to assign audits to individuals and track completions over the course of each month, adjusting efforts for compliance accordingly. Audit results could be displayed on unit-specific dashboards in-app. At BCHO, 4 nurse educators collaborated with 4 auditors to develop 17 microlearning best practice videos for central line-related procedures. Managers assigned videos to specific staff on the app as needed, in conjunction with a self-assessment that mirrored the CLABSI audit. Selected audits included microlearning training to reinforce inter-rater reliability.

Conclusions: Digitization of previously labor-intense tasks allows QI teams to level the workload across managers and encourages timely and regular completion of audits. The system supports rapid identification of actionable gaps, and facilitates timely intervention in frontline training. This dynamic process, accessed on one platform, promotes partnership of management and frontline staff in both observation and training, driving team-based QI.

References:

1. Jones LF, et al. Effectiveness of behavioural interventions to reduce urinary tract infections and Escherichia coli bacteraemia for older adults across all care settings: a systematic review. *J Hosp Infect.* October 2018.

Oral Abstract 8

[T] A Novel Post-Discharge Transition of Care Clinic and its Impact on Hospital Readmissions at 30 days

3:15-3:30pm

Christopher Jackson, Ankur Seth
University of Tennessee, Memphis, USA

Introduction: Reducing hospital readmission, which costs \$17 billion per year, has been targeted by the Center for Medicare and Medicaid Services (CMS) as one of many potential solutions to reduce the dramatic rise in health care

costs. Transition of care (TOC) services that extend the role of the hospitalists to the outpatient setting have emerged as an important element in the readmission reduction strategy. Evidence suggests that improved access and continuity of care provided by transition of care clinic may decrease preventable post hospital discharge adverse events. However, the optimal time to follow-up and format of such a transitions of care clinic remains unknown.

Purpose: The goal of this study was to compare the hospital readmission rates of patients who attended a post-discharge TOC clinic appointment within 14 days of their discharge date to patients who did not have a TOC clinic appointment within 14 days of their discharge date.

Methods: This retrospective cohort study analyzed patients on a tertiary hospital teaching service discharged from January 2016 to September 2018. Patients discharged from the tertiary hospital teaching service were given an appointment to the post-discharge TOC clinic within 14 days of discharge. Patients who did not attend the appointment would serve as the control group. At the post-discharge TOC clinic appointment, medical interventions done included discharge medication reconciliation, ordering and provision of DME, subspecialty referral, and emergency room referral if indicated. Demographic and readmission data were obtained through the electronic medical record.

Results: 7203 patients were included in this study (6831 patients in the control group, 372 patients in the intervention group). Primary outcome measure was hospital readmissions within 30 days of original hospital discharge. Readmission at 30 days was significantly different between the TOC clinic group compared to the control group, with an absolute risk reduction of 4.38%. Subgroup analysis was done to determine if certain groups of patients were at higher risk of readmission within our TOC clinic group. Patients with a diagnosis of stroke had a significantly higher risk of being readmitted within 30 days compared to patients without a diagnosis of stroke (RR = 2.99, 95% CI 6.96-1.29)

Conclusions: Follow-up at a post-discharge TOC clinic resulted in a 33% decrease in the risk for readmission for 30 days. Utilization of TOC clinic after discharge reduces hospital readmissions and health care costs. The number needed to treat to reduce one readmission with this TOC clinic model was 22.

