3rd Annual

Advancing Healthcare Quality Research at Emory University

Quality Research to Accelerate Value and Innovation in Health Care

Wednesday, May 18, 2016 • 8:30 AM - 5:00 PM

School of Medicine Building, Auditorium 110

#QualityResearch16

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Schedule of Events

8:30 am: Opening remarks by David Stephens, MD

8:35 - 10:00 am: Session I: Big Data at Emory
Moderators: Nathan Spell, MD and Elizabeth Krupinski, PhD

8:35 am: "Pairing Emory and external data for health services and health policy research" (Jason Hockenberry, PhD)
9:00 am: "Creation of a regional system of care to reduce time to definitive treatment in patients with heart attacks (STEMI) at Emory Hospitals and across Atlanta" (Abhinav Goyal, MD, MHS)
9:15 am: "Peripheral arterial disease: a VA population experience" (Shipra Arya, MD)
9:30 am: "Uses of natural language processing in radiology health services research" (Falgun Chokshi, MD, MS)
9:45 am: Highlighted abstract submission: "Home health pilot decreases readmissions in high-risk ileostomy patients" (Virginia Shaffer, MD)
9:55 am: Moderated discussion of other projects at Emory

10:00 am: Poster session and coffee break

10:45 am - 12:15 pm: Session II: Patient-centered Population Health
Moderators: Rachel Patzer, PhD, MPH and Daniel Hunt, MD

10:45 am: "Toward better, not more, end-of-life care" (Mi-Kyung Song, PhD, RN)
11:10 am: "Exploring the impact of sex discrepancies in HIV treatment and cure" (Cecile Delille Lahiri, MD, MSc)
11:25 am: "A patient-centered population health approach to older adults with CKD" (Barrett Bowling, MD, MSPH)
11:40 am: "The AEIOU chest pain study: Assessing Emergency Ischemia in the Observation Unit - ethnicity and gender opportunities" (Michael Ross, MD)
11:55 am: Highlighted abstract submission: "Reducing 'inappropriate' percutaneous coronary intervention procedures in a multi-hospital, academic health care system" (Joe Xie, MD)
12:05 pm: Moderated discussion of other projects at Emory

12:15 pm: Lunch, networking tables, poster viewing

1:00 pm: Keynote talk: Pamela Douglas, MD: "Improving the quality of diagnostic care: Insights from chest pain evaluation research"

2:00 pm: Poster session and coffee break

2:45 - 4:15 pm: Session III: Data-driven Health Policy
Moderators: Fred Sanfilippo, MD and Leslee Shaw, PhD

2:45 pm: "High impact research transforming health care policy" (Carlos del Rio, MD)
3:10 pm: "Choosing wisely: Translating evidence into practice change" (David Howard, PhD)
3:25 pm: "The Medicare Access & CHIP Reauthorization Act (MACRA) and models for containing costs" (Adam Wilk, PhD)
3:40 pm: "Health care disparities in heart failure" (Alanna Morris, MD)
3:55 pm: Highlighted abstract submission: "Decreasing length of stay and cost in colorectal surgery using an enhanced recovery program" (Liza Roger, MD)
4:05 pm: Moderated discussion of other projects at Emory

4:15 pm: Awards presentation: Kimberly Applegate, MD and Rachel Patzer, PhD, MPH

4:30 pm: Concluding remarks: Leslee Shaw, PhD and Rachel Patzer, PhD, MPH, event co-coordinators

Keynote Speaker

Pamela Douglas MD, MACC, FASE

Pamela S. Douglas, MD is the Ursula Geller Professor of Research in Cardiovascular Diseases in the Department of Medicine at Duke University and Director of the Multimodality Imaging Program at Duke Clinical Research Institute. During her 30+ years of experience she has led several landmark multicenter government studies and pivotal industry clinical trials along with outcomes research studies. She is renowned for her scientific and policy work in improving the quality and appropriateness of imaging in clinical care, clinical trials and registries and through development and dissemination of national standards for imaging utilization, informatics and analysis. She has been among the pioneers in a number of areas including heart disease in women, sports cardiology, and cardio-oncology. Dr. Douglas' wealth of experience includes authorship of over 400 peer reviewed manuscripts and 30 practice guidelines, and service as the President of the American College of Cardiology, President of the American Society of Echocardiography, and Chief of Cardiology at both the University of Wisconsin and Duke University. She has also previously served on the faculties of the University of Pennsylvania and Harvard University. She currently serves on the External Advisory Council of the National Heart, Lung and Blood Institute and the Scientific Advisory Board of the Patient Advocate Foundation.

Information Tables

Please take a moment to visit the information tables in the lobby to learn about the following:

Woodruff Health Sciences Center (WHSC) Library
Website: health.library.emory.edu
Contacts: John Nemeth, MSLS, Clinical Informationist and Kevin Bradford, MLS, Clinical Informationist

The mission of the WHSC Library is to optimize research, education, and patient care processes with reliable and sustainable access to data and information. The website includes numerous resources, workshops, databases, training materials, and support tools.

Data Analytics and Biostatistics Core (available to Department of Medicine faculty)
Website: medicine.emory.edu/DAB
Contact: Chad Robichaux, MPH, Research Informatics Analyst

Offers biostatistics, data analytics, study design, biomedical informatics, and other related services to Department of Medicine faculty members.

Educational Programs in Health Services Research:

- Atlanta VA Quality Scholars
  Websites: va.gov/oaa/specialfellows/programs/SF_NQSF_default.asp
  bcm.edu/education/programs/training-in-healthcare-quality/veteran-affairs-quality-scholars
  Contact: Anne Tomolo, MD, MPH
  The VA Quality Scholars Program (VAQS) is the premier training program in quality improvement and patient safety at the United States Department for Veterans Affairs. For over 15 years, VA Quality Scholars has served as an international bellwether for training healthcare professionals in quality improvement scholarship.

- Emory Healthcare Quality Academy
  Website: ourehc.org/departments/quality
  Contact: Nathan Spell, MD
  The Emory Healthcare Quality Academy offers two courses available to faculty, staff, and residents. Leadership for Healthcare Improvement is a two-day overview course, and the Practical Methods for Healthcare Improvement is an intensive course involving 12 days over 4 months aimed to develop expertise to independently lead QI projects.

- School of Medicine Health Services Research Course
  Website: med.emory.edu/faculty_dev/research/hsr-course.html
  Contact: Barrett Bowling, MD, MSPH
  This development course, focused on health services research, is available to Woodruff Health Sciences Center faculty and fellows with an interest in research or scholarship, but limited experience with health services research. The course consists of twelve sessions held two to three times monthly from January to May.

- ACTSI Masters of Science in Clinical Research Program
  Website: actsi.org/retcd
  Contact: Cheryl Sroka
  The purpose of this master's program is to provide didactic and mentored clinical and translational research training for physicians and other doctoral scientists who need and desire to develop the analytic and other skills necessary for clinical investigation. As part of the program, students take a course in health services research.

Current Studies in the Mood and Anxiety Disorders Program at Emory
Website: emoryclinicaltrials.com
Contact: Kathleen Helms, Clinical Research Coordinator

The Mood and Anxiety Disorders Program of Emory University's School of Medicine is a dedicated research program within Emory's Department of Psychiatry and Behavioral Sciences. For over twenty years our program has been conducting high quality, clinically valuable research into the biology and treatment of mood and anxiety disorders Individuals incur no cost by taking part in our studies and participation is strictly confidential. Please visit the booth today to learn more about their current studies.

Highlighted Abstract Oral Presentations

9:45 am

"Home health pilot decreases readmissions in high-risk ileostomy patients"

Shaffer VO, Owi T, Kumarasamy MA, Sullivan PS, Srinivasan JK, Vaughns B, Fanning V, Kilgore A, Staley CA, Sweeney JF, Esper G

Readmissions to the hospital have come under scrutiny in a new healthcare era. At our institution UHC all-cause 30day readmission for ileostomies ranged from 15 to 33% (mean 18%). Because ileostomy patients are a high risk group for readmission, they are an ideal cohort for improvement. The purpose of this pilot was to develop a partnership with a home health agency VNHS in the form of standardized discharge/home health orders that included triggers that would a elicit communication back to the surgeon so that a corrective action could be taken before the patient required a readmission. Our goal was to reduce UHC all-cause 30d readmission in ileostomy patients by 15% (from 18 to 15.3%) in 5 months. The standard order set was vetted and agreed upon by all the stake holders and implemented. A weekly 15 minute conversation was implemented between the EUH team and VNHS. Because it appeared to be a successful intervention, it was extended to a full year. The readmission rate for VNHS ileostomy patients decreased from 19 to 7%. During the same time, non-VNHS ileostomy patients were receiving standard of care and their readmission rate remained stable, 16 to 20%. Before implementation, VNHS and non-VNHS ileostomy patients had similar readmission rates, 19% and 16%, respectively. During the study period, the total sum cost of readmissions for non-VNHS patients receiving standard of care increased by 58.3%. For patients in the pilot, the readmission costs decreased by 77.6%. In conclusion, we successfully implemented a pilot program that formed a partnership with a home health agency with standardized discharge orders and decreased ileostomy UHC all-cause 30d readmissions. The pilot was started with a small number of patients, but will be expanded based on this initial success.

11:55 am

Reducing "Inappropriate" Percutaneous Coronary Intervention Procedures in a Multi-Hospital, Academic Healthcare System

Xie JX, Casey M, Liberman H, Lieppe H, McDaniel M, Rab T, Robertson GC, Samady H, Shaw LJ, Goyal A

Background: In 2012, the CathPCI Registry® implemented updated Appropriate Use Criteria (AUC) for Revascularization. At that time, all four hospitals in our healthcare system had inappropriate percutaneous coronary intervention (PCI) rates that were equivalent to or worse than the U.S. median, which created an opportunity to improve our PCI quality.

Objective: We sought to reduce the rates of inappropriate PCI procedures across all hospitals to below the national median by 2015.

Methods: From 2012Q2 to 2015Q2, we implemented five specific quality improvement interventions: 1) Email notification to interventionalists within one week of an inappropriate PCI procedure performed; 2) Regular catheterization lab conferences dedicated to AUC; 3) Complete revision of electronic procedure note templates to include data fields for variables used in determining AUC; 4) Educating interventional fellows and referring physicians regarding suitability for revascularization according to AUC; 5) Dissemination of annual scorecards to interventional cardiologists, which highlighted performance in AUC metrics.

Results: In 2012Q2, the "rolling 4 quarters" (R4Q) rate of inappropriate PCI's across each of our four hospitals were 45%, 33%, 26%, and 20%, compared with the U.S. median rate of 21%. At the end of the measurement period in 2015Q2, all four hospitals were outperforming the national median. The R4Q inappropriate rates in our hospitals were 8%, 9%, 13%, and 1%, respectively, compared with the U.S. median rate of 13%.

Conclusions: By adopting a multi-pronged, system-wide approach towards quality improvement, we reduced inappropriate PCI rates in all four hospitals to below the national median within three years.

3:55 pm

Decreasing Length of Stay and Cost in Colorectal Surgery Using an Enhanced Recovery Program

Roger EI, Park K, Perry LM, Perez S, Kumarasamy M, Shaffer VO, Staley C, Srinivasan J, Esper G, Gordon M, Tomlin S, Wolf FA, Sullivan PS

Background: Enhanced recovery after surgery (ERAS) pathways have been shown to reduce length of stay and complication rates without increasing readmission rates or mortality. Our aim was to institute an ERAS program in a multidisciplinary fashion for patients undergoing elective bowel surgery with the goal of decreasing length of stay (LOS) by 1 day and decreasing complication rates by 20%.

Methods: Four surgeons at our institution implemented 17 variables defined in The Enhanced Recovery Program in National Surgical Quality Improvement Program (ERIN). Examples of the variables included pre-operative patient education, narcotic sparing pain strategy, intraoperative

goal-directed fluid therapy, and early ambulation and feeding. A multidisciplinary team met weekly to identify compliance with the 17 variables for process improvement. Length of stay, complications, readmission, and direct variable cost were compared between years.

Results: A total of 102 patients receiving colorectal surgery by one of four surgeons in the ERIN program in 2015 were compared to 110 cases performed in 2014. The distribution of colon resections (84 in 2014, 87 in 2015) and rectal resections (26 in 2014, 15 in 2015) remained the same ($p=0.10$). LOS was reduced an average of 2.2 days from 8.1 in 2014 to 5.9 in 2015 ($p<0.001$). The complication rate remained the same at 15.7% in 2015 compared to 18.2% in 2014 ($p=0.63$). Thirty day readmission rate in 2014 was 8.2% and remained the same in 2015 at 9.8% ($p=0.68$). The direct variable cost per patient encounter was decreased by $2,624 from $13,205 in 2014 to $10,581 in 2015 ($p=0.01$).

Conclusion: A defined 17-variable Enhanced Recovery Program through NSQIP (ERIN) can be used to decrease LOS and cost without increasing the re-admission rate.

Poster Presentations

In order by poster number.

#1

Nocturnal hemodialysis and lower ultrafiltration rates help to reduce hypotensive episodes

Lea JP, Wilk A, Senetar K, Franch H, Plantinga L.

Nocturnal In- center hemodialysis (HD) is starting to become more utilized for End-Stage Renal Disease (ESRD) patients across the US, but is currently used only in a minority of patients. These patients run longer hours (6-8 hours) thrice weekly compared to traditional in-center HD at 3-4 hours, 3 days a week. It is expected that nocturnal HD patients will have better control of blood pressure (BP) and lower ultrafiltration (UF) rates due to longer sessions. Recent literature has emerged suggesting that high intradialytic UF rates greater than 10-13 ml/kg/hr are associated with increased mortality. Thus we compared UF rates in patients on nocturnal HD to those on the usual day schedule in our Emory outpatient Hemodialysis Units. Our study cohort is described in table 1.

	Nocturnal (n=63)	Day shift (n=1356)	P value
Age yrs.	51	58.6	<.001
Female %	39.1	43.6	0.3
Black race %	90.6	86.3	0.5

UF rates are defined in ml/kg/hr. The mean UF rate for nocturnal HD was 5.5 ml/kg/hr and for day shift was 8.1 ml/kg/hr, p<.001. There was also a statistically significant difference in post dialysis SBP with the nocturnal group showing a 15.7 mmHg decline in SBP compared to an 18.5 mmHg reduction in SBP for the daytime group, p=0.03.

These results indicate that nocturnal dialysis may be a safer form of renal replacement therapy in the ESRD population in that it allows slower fluid removal rates and less precipitous drops in blood pressure. Further investigation is needed to determine if these findings translate into better cardiovascular outcomes and improved survival.

#2

Opioid reduction in the acute rehabilitation setting, a quality improvement measure

Patel K, McCrate A, Strasser D

Background: This study aims to decrease opioid burden among patients admitted to Emory Rehab Hospital (ERH).

Methods: We will first review all patients admitted to ERH in Feb-March 2016, calculating the Morphine Equivalent Dose (MED) for all medications on admission and again at discharge. For our intervention group of patients admitted from April-May 2016, a multi-pronged intervention will be performed which consists of the following: posting a chart of opioid medication potencies and non-opioid alternatives in clinical work areas; posting/implementing the relevant CDC guidelines on opioid prescribing; delivering an informational lecture to all residents and attendings at ERH; adding mild-opioid alternatives (e.g. nucynta) to the ERH formulary, if possible. The primary outcome measure will be comparing percent change in the MED from admission to discharge in the pre-intervention and post-intervention groups. Based on sample size estimates and assuming a 15% reduction rate, the time periods were deemed sufficient to recruit the necessary 111 patients in each arm to show a statistically significant difference at alpha = 0.05 and beta = 0.80.

Secondary comparisons for the two time periods include: Mean Morphine Equivalent Daily Dose (MEDD) during admission, FIM change, length of hospitalization, discharge setting, incidence of hospital acquired complications (UTI, pneumonia, pressure sores.)

Projected results/conclusion: We expect to find that our intervention is successful in reducing MED amongst our population. Furthermore, we expect that the secondary outcomes will demonstrate benefits to patient outcomes and quality of life. These methods can likely be expanded to other parts of the Emory Network, including outpatient centers and acute inpatient care.

#3

The impact of electrical waste in the EUH perioperative services

Kothari S, Lynde GC

Decreasing wasted electricity, defined as electrical items left on even though no one is using the space, is an overlooked opportunity to save money and reduce our University's impact on the broader community. We audited the electrical appliances left on in the operating rooms over a period of three weeks in the preoperative space, and the recovery room at Emory University Hospital to calculate how much electricity was consumed in rooms that were not in use.

Based on our collected data, Emory University Hospital could save $30,988 by turning off unused equipment and lights. Almost 2/3 of this energy savings could be achieved in the individual operating rooms where both overhead lights, computers, anesthesia machines, and television sets were left on 24 hours a day. Based on individual measurement, overhead lights consumed the majority of electricity followed by the BIS monitor. Most of the overhead fixtures were fluorescent bulbs. Some had been converted to LED.

Based on our findings, Emory Healthcare should require staff to walk through the operating room environment each evening to turn off unused appliances. This would not only decrease annual electric expense but would also increase the lifespan of the equipment.

#4

Where the guidelines are silent: provider perspectives on inpatient ARV initiation at the time of HIV/AIDS diagnosis in routine hospital practice

Goswami ND, Arseniadis K, Godoshian V, Gojer S,Gruhler H,Haile M, Del Rio C, Cooper, H

The need for an HIV-infected person to start antiretroviral therapy (ART) soon after diagnosis is increasingly apparent. Where and how a person diagnosed with HIV/AIDS starts on therapy has received less attention. We characterize inpatient healthcare providers' attitudes about initiating modern ART regimens in hospitalized HIV-infected patients. We used purposive sampling to conduct in-depth interviews with physicians providing inpatient care for HIV-infected patients at three hospitals in Atlanta, GA from 2014-2015 to understand barriers to ART initiation for HIV/AIDS inpatients. Interviews were audiotaped, transcribed, and analyzed (NVivo 10.0). Categories were developed and modified on the basis of what themes emerged and used to develop a codebook. We achieved saturation after interviewing 15 physicians. Providers with more experience were less concerned about potential for viral resistance than trainees and general medicine providers. Among all providers, the most salient barriers to ART initiation for inpatients with an HIV/AIDS diagnosis were concerns about payer for medications. Physicians providing care at the large public hospital identified these issues more often than providers at other hospitals, who identified limited availability of ancillary staff as a frequent barrier to inpatient ART initiation. Providers in both settings cited system-level factors more often than patient behaviors/comorbidities or perceived medical urgency in their decision-making. Accessing funding mechanisms that would streamline ART payer source for hospitalized patients and ensuring that they are promptly linked to outpatient care may facilitate early ART initiation in the inpatient setting, and potentially hasten time to viral suppression for patients with HIV/AIDS.

#5

Investigating acute care transfers at Emory rehabilitation hospital

Agubuzu O

Since July 2014 Emory Rehabilitation Hospital has seen a substantial increase in patient volume. This has been accompanied by a significant increase in the number of patients who are transferred to acute care hospitals. Acute Care Transfers (ACTs) are a critical indicator of quality among rehabilitation hospitals and should be kept to a minimum. ACTs interrupt patients' rehabilitation course, generate significant health care expenditures, reduce revenue for the rehabilitation hospital, and put patients at risk for hospital-acquired complications.

This study examines all ACTs from Emory Rehabilitation Hospital over an 18-month period (July 2014 – December 2015). This study aims to identify which patient groups are at high risk for ACT and determine potential areas for improvement in medical management at Emory Rehabilitation Hospital. The long-term goal is to improve the identification, evaluation, and management of acute changes in condition of patients at Emory Rehabilitation Hospital.

Ultimately we hope to establish protocols for risk assessment and patient management to reduce the frequency of potentially avoidable transfers to the acute hospital.

#6

Do interactive group sessions promote weight loss for under-served obese patients in an urban safety-net academic primary care center?

Schmidt S, Xiaohe Y, Trammell A,Woodruff R, Rask K, Bussey-Jones J

The Grady Primary Care Center (PCC) is an urban outpatient clinic accommodating 60,000 visits annually. Mostly patients are of low-literacy and uninsured. Approximately 60% are obese. Obese adults were enrolled in weekly group sessions teaching self-management skills for making healthy behavioral choices related to diet and exercise. Sessions were led by general internists. Patients were invited to attend ongoing weekly classes (topics repeated themselves on a quarterly basis). We evaluated a total of 83 patients who attended one or more group sessions. Due to missing weights at 6 months for some patients, only 64 were included in the 6 month analysis. Weight loss was analyzed in two ways. One was the difference between 6 month measure and baseline measure (6 month weight- baseline weight). The other was

the indicator of 5% or more relative weight loss at 6 months in comparison to the baseline. In assessing association with class attendance, we dichotomized the attendance, over 3 classes or otherwise, as a way to address the distributional skewness of the number of classes. Univariable logistic regression analysis was used to examine the association between 5% or more weight loss and dichotomous class attendance. The results show a non-significant association with an OR of 1.63 and p-value of 0.421.Linear regression was employed to test the association between absolute weight loss and dichotomous class attendance over 6 months, with a p-value of 0.0076. This study shows that in an urban outpatient setting serving large numbers of low-income, low-literacy patients, group classes lead to statistically significant weight loss at 6 months, though this does not translate to clinically significant weight loss.

#7

Impact of a pilot mail-order specialty pharmacy program on antiretroviral adherence and rate of undetectable viral load (UVL) in a Ryan White funded urban clinic

Nguyen ML, Alton C, Patel M, Colasanti J, Armstrong W

Background: At the Grady Infectious Disease Program (IDP), 26% of patients are not virologically suppressed. The IDP is Ryan White HIV/AIDS Program clinic (RWHAP). The pharmacy at IDP initiated a specialty pharmacy pilot program (SPPP) with a mail order component for patients who reported transportation challenges and, in many cases, also had issues with adherence.

Methods: From June 2013 to June 2015, pharmacy data and clinic data were abstracted. Patient demographics, laboratory data (including CD4 T-lymphocytes and HIV RNA) and date of enrollment in the SPP were recorded. Descriptive statistics were utilized to describe the population enrolled in the program.

Results: 176 patients were enrolled in the SPPP since its inceptions in June 2013. Thirty eight participants had one year of follow up data available. The majority was African American with a mean age of 51 years old. Of those who had UVL at time of enrollment ,63% were female and of those with a detectable viral load only 32% were female. Nearly half of the patients live farther than 15 miles from the IDP. Half of the patients were not virologically suppressed at the time of enrollment but after 1 year of follow-up 96% achieved viral suppression. Both patients and provider' report a high level of satisfaction with the program. Patients consistently describe the program as "a life saver."

Conclusion: The mail order SPPP demonstrates very high rates of viral suppression. This carries individual health benefits as well as potential public health benefits of decreased HIV transmission. Larger studies are needed to better assess true impact of the pharmacy mail order program.

#8

Improving the care of diabetic patients in an academic medical practice

Alfonso, SA, Otabil, S, Redmond, R, Adjei, B

Introduction: Diabetes is the 7th leading cause of death and affects over 29 million Americans. HbA1c > 9 or missing is a marker of poor control of diabetes and a harbinger of the many complications associated with this chronic condition. Our academic medical practice has one of the highest rates of uncontrolled diabetes among the primary care specialties at 26% which represents 753 unique patients.

Methods: In 2015 our practice undertook a multipronged approach to improve the care of our diabetic patient population as defined by a reduction in % of patients with HbA1C greater than 9 or missing. The efforts consisted of standardization of our in clinic processes as well as a novel non face to face review of care termed team review. Once per month all providers and staff meet to review care using a standardized approach of a predetermined list of patients.

Results: Initial results after standardization of processes showed expected improvement in process outcomes such as foot exams. Our outcome measure of reduction in HbA1C has not improved. We propose that a closer analysis of our diabetic population and an exclusion of newer patients as defined by patients with less than 4 months of care will demonstrate in improvement in % of patients defined as uncontrolled.

#9

The effect of nonpharmacological and pharmacological interventions on sleep quality in an acute rehabilitation hospital

Fausel ZC, Bush-Arnold MA, Strasser, D

Study design: A quality improvement project in rehabilitation medicine.

Objective: The aim of this study is to evaluate the quality of sleep in an inpatient rehabilitation hospital and reevaluate sleep quality after implementing hospital wide nonpharmacological and pharmacological interventions.

Methods: Patients will fill out the Richards-Campbell Sleep Questionnaire upon discharge from an inpatient rehabilitation hospital for one month. After one month of data collection, nonpharmacological and pharmacological interventions will be instituted in the hospital and the Richards-Campbell Sleep Questionnaire will be collected upon discharge.

Results: Study is currently in the data collection phase

Hypothesis: Quality of sleep in an inpatient rehabilitation hospital will improve once nonpharmacological and nonpharmacological interventions are instituted.

#10

Early progressive mobility project in the medical acute care unit

Seedahmed M, Barlow JL, Lowe

Purpose: The purpose of this protocol is to establish guidelines so that practitioners can offer all patients an appropriate level of physical activity that is tailored to each individual for their level of illness during their hospital stay in the acute care unit.

Goals: 1. Preserve baseline functional status.
2. Encourage and enable patients to be as physically active as possible during their stay.
3. Decrease length of stay in the hospital.
4. Decrease incident of in-house falls.
5. Restore sleep cycle and decrease incidents of in-house delirium.

Background: 1. Most of the early mobility studies were targeting patients in the ICU.
2. Prevalence of critical care myopathy, ranges anywhere from 25-33% of all patients who have been on mechanical ventilation for more than 7 days.
3. Early progressive mobility can improve patient function, increasing the likelihood that they are functionally independent by time of hospital discharge4.

Methodology: In order to facilitate stratification of patients for early progressive mobility in the acute care unit, a three tiered color-coded system will be utilized. The intention of this system is to set an easily understood early mobility protocol that stratifies patients by their functional capabilities and is accessible to all members of the acute care staff. Upon admission, it is the responsibility of the RN to determine the appropriate stage for each patient. Re-assessment should be done on a daily basis during morning SIBR rounds by the charge nurse. An adjustment to the appropriate stage for the patient as necessary may be made by any member of the interdisciplinary team, and signaled by a color coded card displayed outside of the room.

Results: Analysis will be done by April 10th.

#11

Frailty assessments in Emory's anesthesiology pre-operative clinic

Hemani S, Hesse S, Hill LL, Garcia PS

Frailty is defined as a state of reduced physiologic reserve associated with increased susceptibility to injury. Previously, other investigators have concluded that frailty is an independent predictor for postoperative complications. In this study, we examined the feasibility of collecting multiple sets of physiological metrics in our Anesthesia Preoperative Clinic (APC) and hope to determine which measures correlate best with outcomes.

Patients who presented to the APC for surgery (between Nov 2015 and Mar 2016) were initially screened for age, number of medications, and ambulatory status. Frailty assessments were performed only on patients that had achieved at least 60 years, or were taking five or more systemic medications daily, or were non-ambulatory at baseline. These patients were asked standard questions outlining their general state of health and subjected to functional testing including cognitive screens, hand grip strength, and gait speed. Perioperative measures such as length of hospital stay, PACU time, and length of case were also recorded for future analysis of a potential correlation of our frailty metrics with these outcomes.

Our ultimate goal is to incorporate frailty metrics as a part of every patient's preoperative evaluation to help determine which patients require the most extensive workup prior to surgery. Preliminary analysis shows that nearly 50% of total patients who presented to the APC had frailty metrics recorded. Barriers to data collection were failure to identify the quality control officer of a screened patient and a rush to other scheduled appointments. A survey to APC staff revealed that staff was unsure of the relevance of the data, and that they were reluctant to implement these strategies in addition to their existing workload.

#12

Implementation of a RAI-frailty screening within a local VA vascular clinic: a quality improvement initiative

Tucker P, Flink B, Varley P, Hall D, Johanning J, Clevenger C, Tomolo A, Arya S

Background: There is an increasing focus on decision-making and care of the frail patient in surgical settings. The Risk Analysis Index (RAI) has been used as a pre-operative

screening tool to identify frail patients at risk for post-operative complications and mortality. The aim of this quality improvement (QI) initiative was to implement and sustain 80% RAI-Frailty screenings for pre-operative patients in a vascular surgery clinic at the Atlanta Veterans Affairs Medical Center (AVAMC).

Methods: A cause-and-effect diagram was utilized to understand the local problem and identify areas for improvement. Interventions were developed utilizing the Model for Improvement with Plan-Do-Study-Act (PDSA) cycles as a framework to achieve the project aim. Patients scheduled or considered for elective vascular surgery were eligible for RAI-Frailty screening. Audit and feedback was provided to vascular surgery providers during PDSA Cycle 1. The integration of RAI-Frailty screening within the electronic medical record system was initiated in PDSA Cycle 2.

Results: RAI-Frailty screening completion rates were collected from chart reviews and analyzed each week using a run chart to measure improvement. PDSA Cycle 1 results demonstrated improvement in RAI-Frailty screening rates from a baseline of 0% to 83% following audit and feedback. PDSA Cycle 2 is under way and the results are forthcoming.

Conclusion: RAI-Frailty screening was successfully implemented in AVAMC vascular surgery clinic and the project aim of 80% was reached using standardized QI methodology. Next steps for this initiative will focus on sustaining and spreading RAI-Frailty screening to other subspecialty surgical clinics.

#14

Nocturnal dialysis patients at Emory dialysis

Senetar KM, Plantinga LC, Wilk AS, Lea JP

Background: Nocturnal dialysis (ND) is a relatively new dialysis modality alternative to traditional (daytime) in-center hemodialysis. Emory Dialysis has offered ND to a limited number of its patients since 2010. Our aim was to describe the ND patient population versus all other Emory Dialysis patients in basic traits and other traits not available to researchers using administrative data only.

Methods: We extracted data from the electronic health records of all Emory Dialysis patients, including patient demographics, dialysis treatment orders and comorbid conditions. We also obtained psychosocial assessment information for ND patients. We identified ND patients as those for whom at least 80% of dialysis sessions over a three-month window began at 6:30 pm or later and lasted at least 5 hours. We prepared simple comparisons between these patients and all other Emory Dialysis patients.

Results: ND patients accounted for 4.7% (N=67) of Emory's 1,420 dialysis patients. On average, ND patients were more likely than non-ND patients to be male (63% vs 56%, $p = 0.30$) and younger (mean age 51 vs 59, $p < 0.001$). The leading causes of ND patients' chronic kidney disease (CKD) were hypertension (45%) and diabetes (13%), but non-ND patients' causes of CKD were more concentrated in these conditions (52% and 20%, respectively). ND patients' vintage at ND-start was 25.8 months greater than non-ND patients' vintage at their first Emory Dialysis session (51.2 vs 25.4 months since first dialysis, $p = 0.002$).

Conclusion: These preliminary results suggest that ND patients are distinguishable from non-ND patients with respect to basic demographic and clinical traits. Further analyses will be needed to examine how ND patients are distinguishable in clinical and psychosocial characteristics.

#15

Frailty and one-year mortality in major intra-abdominal operations

Li JL, Henderson, MA, Revenig LM, Ringer EL, Sweeney JF, Sarmiento JM, Kooby DA, Maithel SK, Master VA, Ogan K

Objective: To examine the relationship between preoperative frailty and one-year mortality in a broad range of surgical procedures.

Introduction: Frailty is an objective measurement capable of preoperatively identifying patients with increased risk of 30-day morbidity and mortality, though less is known about its utility beyond that timeframe. We hypothesized that preoperative frailty is associated with an increased risk of one-year mortality in patients undergoing major intra-abdominal surgery.

Methods: Demographics, laboratory values, and traditional surgical risk assessments (ASA scale, ECOG, Charlson Comorbidity Index) were collected prospectively. Preoperative frailty was evaluated using Fried criteria. Postoperative complications were defined by Clavien-Dindo Classification. One-year mortality data was gathered from phone calls, medical records, and the National Death Index.

Results: This study included 189 patients with a mean age of 62 years. At enrollment, 139 (73.5%) patients were considered "not frail", while 50 (26.5%) were considered "intermediately frail" or "frail". 73 (38.6%) patients experienced a 30-day postoperative complication.
At one year, 15 (7.9%) patients had died- 5 (3.6%) not frail and 10 (20.0%) intermediately frail/frail patients. Postoperative mortality occurred < 30 days, between 31-100 days, and > 100 days in 3, 4, and 8 patients respectively. All 30-day mortalities occurred in frail patients who had a postoperative complication.

Conclusions: Frailty status is predictive of one-year postoperative mortality. The Fried Frailty Criteria has the

potential to more accurately evaluate surgical patients' long-term mortality risk, particularly when considered collectively with traditional surgical risk assessment tools.

#16

Hospital readmissions among Emory hemodialysis patients

Plantinga LC, Jaar BG, Lea JP

Background: Starting in 2017, dialysis facilities will be accountable for readmissions among their patients. Our aim was to describe the burden of readmissions among hemodialysis (HD) patients at Emory Dialysis.

Methods: Electronic medical record data from all patients treated at Emory Dialysis, which operates three outpatient clinics in Atlanta, were extracted into linkable datasets including information on patient demographics, comorbid conditions, hospital admissions, and treatment orders. Here, we examined data among in-center HD patients and defined a readmission as an admission within 30 days of discharge from the previous admission.

Results: Among 1217 HD patients treated from 2/10 to 8/15 (mean age=53.9 years, 89.4% black, 43.1% female), there were 5118 admissions (mean admission rate, 1.9 per patient-year); 31.4% of admissions were readmissions. Half (49.6%) of readmissions had no assigned cause; the most commonly assigned causes were fluid overload (10.0%) and vascular access issues (6.3%). Admissions among patients who were younger (<65 vs. >65 years: 32.3% vs. 26.8%, P=0.001) and black (31.6% vs. 26.4%; P=0.16, NS) were more likely to be readmissions; no differences were noted by sex or presence of congestive heart failure or diabetes. Overall, 427 (35.1%) patients had at least one readmission; new dialysis and medication orders were placed within 7 days of the preceding discharge for the first recorded readmission for 32.1% and 5.1% of these patients, respectively.

Conclusion: These results suggest that readmissions in this patient population are high, younger HD patients may be at higher risk, information flow from hospital to outpatient dialysis clinic may be impaired, and there may be missed opportunities to review patient care plans after admissions.

#17

Creation of a 3-part tool for predicting 30-day hospital readmission

Wright PP, Cranmer JN

Background: Stratifying patients' risk for readmission may enable facilities to provide targeted readmission-reducing interventions, to reduce 30 day readmission rates.

Methods: A one-page readmission risk tool adapted existing validated tools for measuring comorbidities, function, and frailty. Each item on the tools was dichotomized for a final aggregate score range from 0-21. The tool was administered within 24-hours of admission by nurses and clinical nurse specialists in a community hospital system from 2011-2012. A retrospective audit of 1,944 records identified 197 admissions for congestive heart failure, myocardial infarction, and pneumonia. Multivariate and univariate binary logistic regression tested the relationship between demographics, the aggregate risk score and 30-day readmission. Receiver Operating Characteristics (ROC) and count-R-squared tested the model's explanatory power; thresholds for predicting readmission were created using Marginal Effects (ME) on empiric data.

Results: The aggregate score powerfully predicted 30-day readmission in univariate and multivariate analysis (odds ratios=1.72, p=0.000 and 1.75, p=0.000, respectively) and robustly explained readmission risk (area under the ROC-curve (AUC)=82.05%; Count-R-Squared=72.6%; goodness-of-fit-test (GOF)=0.2641). Using ME, the aggregate score linearly predicted readmission risk with an occurrence of readmission by score of 3.82% (score=0), 15.82% (1), 28.37% (2), 39.21% (3-4) and 69.58% (>/=5) respectively.

Discussion: In this population, the aggregate risk score had strong linearly predictive power for identifying patients at most risk for 30-day readmission. Risk stratification using this tool could be the foundation for targeted readmission-reduction strategies.

#18

Evaluation of CT dose at newly acquired community hospital and implementation of CT dose reduction program

Olaiya B, Cox KL, Alexander L, Singh K, Benayoun M, Duszak R, Nandwana SB

Purpose: Identify differences in radiation dose as measured by volume CT dose index (CTDIvol) and standardize CT protocols to decrease radiation dose at newly acquired community hospital (CH).

Methods: IRB approved, HIPAA compliant database search identified abdominal computed tomography (CT) scans performed at a newly acquired community hospital (CH) and academic medical center (AMC) one month prior to departmental merger. Type of examination, number of contrast phases, CTDIvol, mAs, and kVp were collected. Standardized CT protocols from the AMC were subsequently implemented at the CH and the search was repeated 3 months later for the CH scanners. Pre- and post-merger data from CH and AMC scanners was analyzed.

Results: Prior to the merger, mean CTDI was 27.6 mGy at the CH versus 19.3 mGy at the AMC indicating higher

radiation doses at CH ($p<0.05$). Post-merger of AMC's CT protocols at the CH demonstrated an unexpected increase in mean total CTDIvol from 27.6 mGy to 39.8 mGy ($p<0.001$) at the CH. Increased CTDIvol was due to one of the three CH scanners having an incorrect mAs scanning parameter erroneously inputted during the protocol merger. Excluding this scanner, mean total CTDI on the remaining 2 scanners decreased from 27.6 mGy to 19.9 mGy ($p<0.05$) which was in line with CTDI of AMC.

Conclusion: Standardizing CT protocols can significantly decrease radiation dose but care must be taken to ensure correct protocol implementation. Monitoring radiation dose after implementation of CT protocols is paramount to detect unintended errors.

#19

Early experience in the implementation of Radiation Oncology Incident Learning System (RO-ILS) and its impact on quality improvement processes

Esiashvili N, Gartin, OC, Burnham KM, Dhabaan A, Breakstone AL, Gress KS, Caesar L

Purpose: The goal of this study was to investigate the initial impact of an incident learning system on quality improvement processes in a high-volume academic department.

Methods and materials: The American Society for Radiation Oncology (ASTRO) partnered with the American Association of Physicists in Medicine (AAPM) to launch RO-ILS: Radiation Oncology Incident Learning System, and this system was implemented in 2 high-volume clinics of an academic department in November of 2014. The goal was to track unsafe conditions, near-misses, and patient incidents by voluntary reporting of staff into the RO-ILS electronic database. All incident reports were reviewed weekly by an interdisciplinary team of an administrator, a dosimetrist, , a physicist, a physician and a radiation therapist, . Root cause analyses and process improvement actions were executed thereafter as appropriate.

Results: Between 11/2014 and 12/2015, a total of 65 RO-ILS reports were entered. The following are selected examples of improved processes in the department based on RO-ILS reports: 1. Improved physician to physician patient handoff; 2.Improved prescription documentation; 3. Therapists' conduct of a final check of both the prescription and treatment plan; 4. Introduction of IGRT linac couch shift tracker; 5. Introduction of dedicated SBRT rounds; 6. Enhanced code preparedness. There were a total of 14 actionable items identified based on RO-ILS data as "improved" and 6 items as "need further improvement."

Conclusions: RO-ILS data provided valuable guidance to a radiation oncology department in identifying safety risks and implementation of quality improvement steps.

#20

Using cumulative sum control charts to monitor surgeon outcomes

Perez SD, Raval MV, Sharma J, Sweeney JF

Introduction: A growing interest in assessing individual surgeon performance necessitates finding fair and reliable methods to evaluate providers. Cumulative sum (CUSUM) charts are a control chart technique that is ideal for picking up out-of-control patterns quickly in situations with low occurrence rates. In this study, we test whether CUSUM charts can reliably be used to identify surgeons with higher than expected morbidity while simultaneously displaying patterns in performance over time.

Methods: Colon surgery cases from a single institution from January 2010 to August 2015 were studied. The morbidity of the ten surgeons with the most cases was evaluated on CUSUM charts designed to identify those with rates 1.5 times higher than the overall morbidity rate for all patients. Control limits were selected using simulations to calculate expected run lengths.

Results: Of the 10 surgeons evaluated, 4 had an out of control signal noted on individual CUSUM charts at some point in their history. One surgeon had an early signal which normalized over time, possibly caused by an experience learning curve. Another surgeon had a strong signal that exceeded control limits with less than 30 cases accrued and continued to demonstrate a rise in morbidity throughout the study period.

Conclusions: We demonstrate that CUSUM charts are a valuable tool for individual surgeon evaluation. These charts take reliability into account in the setting of low sample sizes by only providing a signal after a significant amount of cumulative evidence indicates outlier status while also displaying individual patterns over time.

#21

Effect of an audit and feedback process on pain, agitation, and delirium documentation in 15 ICUs

Murphy DJ, Overton EO, Folse SL, Holder CK, McMurtry JP, Zellinger M, Sevransky JE

Introduction: Pain, agitation, and delirium are common in ICU patients. National guidelines recommend routine assessment and control of pain, agitation, and delirium (PAD) in the ICU. This study evaluated the effect of reporting on PAD assessment and control.

Methods: The reporting process included EMR data extraction, analysis, report generation, and dissemination. Performance metrics reflected unit-level adherence to assessment and control. An interrupted time series analysis was used to evaluate changes in PAD across 15 target units over 93 weeks (May 2013- Jan 2015). We compared the baseline education period (weeks 1-13) with the subsequent reporting period (weeks 26-93).

Results:
Patient-days (PD) with 6+ pain assessments immediately increased by 53% after report implementation ($p<0.01$). Documented pain control increased 75% in the reporting period ($p<0.01$). Pain metrics then remained steady. PD with 6+ agitation assessments initially increased by 10% ($p=0.02$), but continually improved by 0.5% per week ($p=0.03$). PD without deep sedation or agitation initially improved by 61% ($p<0.01$), and was maintained. PD with at least 2 delirium assessments did not improve in level or trend after report implementation. Delirium control did not initially change, but increased by 0.6% per week ($p=0.01$). The lack of improvement prompted a revision in delirium documentation at week 67. Subsequently, delirium assessment and control improved (21% & 8% respectively; $p<0.01$) and remained constant.

Conclusions: Implementation of a reporting process was associated with a significant improvement in PAD assessment and control across all ICUs. While each PAD element improved significantly following the reporting process, the magnitude and profile of improvement varied between elements.

#22

New horizons in emergency obstetric readiness: using a cascade model to improve clinical quality

Cranmer JN, Dettinger J, Calkins K, Kibore M, Walker D

Background: Improving a clinic's ability to manage basic obstetric emergencies is essential for reducing facility-based deaths. Basic Emergency Obstetric Care readiness (BEmOC) is commonly assessed using discrete tracer items from the signal functions model.

Methods: We compared readiness using a novel clinical cascade and existing signal functions. Cascades quantify the proportion of facilities with resources for identifying emergencies (stage 1), treating them (2) and monitoring-modifying therapy (3). In 2013 prior to a non-equivalent group pre-post implementation trial in Kakamega, Kenya, data were collected from 44 facilities. This nested study quantified these facility's aggregate readiness using the signal function's nine standard tracer items and the cascade's 2nd treatment stage.

Findings: Although most facilities (76.99%) stock tracers, far fewer have resources to identify or treat emergencies. In eclampsia for example, 86.36% stock the tracer drug while 6.82% can administer it. Other estimates by cascade and stage are: Sepsis-Infection—1 (79.6%), 2 (40.9%), 3 (2.3%); Hemorrhage—1 (100%), 2 (56.8%) 3 (2.3%); Retained placenta—1 (77.3%), 2 (38.7%), 3 (0%); Incomplete abortion—1 (72.7%), 2 (18.2%), 3 (0%). Thus, the dominant model of readiness overestimates facility ability to provide emergency care by 54.5%. Across cascades, the aggregate 33.0% loss of readiness varies minimally (SD=0.04).

Interpretation: Comparing the signal functions model to the cascade provides three insights. First, tracers overestimate readiness by 55%. Second, slightly expanding existing nine-item inventories allows one to model drop-offs in readiness. Third, the aggregate readiness loss across cascades may innovatively quantify system capacity globally.

#23

Appropriate telemetry utilization in the acute care unit

Seedahmed M, Boston-Griffiths DD, Boucher C, Limon J, White, Parks

Introduction & background: Telemetry monitoring enables healthcare providers to observe real-time changes in the cardiac function of the patients in their care. Telemetry monitoring in the high risk patient can be extremely beneficial in identifying acute changes in patient conditions, even before the patient experiences symptoms or before clinical signs appear. Despite the development of evidence-based guidelines, overuse of costly telemetry monitoring persists. The purpose of this study is to decrease the unnecessary use of telemetry monitoring by implementing a nurse-driven checklist guided by AHA, thereby decreasing the overall cost of telemetry use.

Hypothesis: What is an effective method to reduce the use of telemetry? What are appropriate processes that can be developed to ensure cost effective use of telemetry? Do the advantages of reducing telemetry usage outweigh the disadvantages?

Methodology: We assigned patients into two groups, controlled and interventional based on geographic location in the hospital. The tele team nurse will then check the electronic medical record (EMR) for a provider order for telemetry. Next, the tele team nurse will determine if a reason for telemetry is noted in the provider's most recent progress note only. Based on the telemetry order (if there is one), the tele team nurse will note the anticipated length for telemetry monitoring. After reviewing the ACC guidelines, the tele team nurse will screen each patient wearing telemetry to determine if they meet the criteria for telemetry monitoring. During multidisciplinary rounds (SIBR) and based on the ACC guidelines, a final decision will be made by the physician.

Results: analysis will be completed by April 15th.

#24

Fluid management and appropriate use of radiological imaging for acute pancreatitis in a community hospital setting: evidence based practice

Berger SH, Van Leer-Greenberg BD, Body C, Chawla S

Acute pancreatitis is one of the most common gastroenterology discharge diagnosis with an estimated annual cost of 2.6 billion dollars. Outcomes are shown to be significantly improved with early diagnosis and treatment.

The objective of our study was to evaluate appropriate initial fluid resuscitation and use of diagnostic imaging in patients with acute pancreatitis admitted to Grady Memorial Hospital and correlate it with patient outcomes.

We report preliminary results from a cohort of 262 patients from an ongoing retrospective study. Our sample was predominantly male (53.6%) black (82.5%) with mean age of 56 yrs. Most common etiologies were Alcohol (40.5%) and Gallstone (23.7%). The mean time to initiation of IV fluids was 4.5 hrs, the mean fluid infusion rate was 137 ml/hr and average total IV fluid received at 24 hrs was 3.67L which is about 40% lower than recommended by national guidelines. Average length of stay was 6 days with 4% mortality. 10% patients required escalation of care and 18% had recurrence. 96% of patients had initial radiological imaging study with 22% undergoing repeat imaging.

Interestingly, when patients with mild pancreatitis were split into three groups based on infusion rate (< 125 ml/hr, 125-200/hr and >200 ml/hr) there was no meaningful difference in length of hospital stay, escalation of care, mortality or readmissions. Our preliminary data suggests that at our institution there may be an inappropriately delay with inadequate initial fluid resuscitation and overuse of imaging in patients with acute pancreatitis.
We acknowledge that at this time our study has significant limitations as we are reporting preliminary data.

Our conclusions may lead to process improvement and ultimately better patient care with decrease in healthcare costs

#25

Adaptive servoventilation treated patients following the SERVE-HF data - quality improvement analysis of outcomes in a single academic practice

Bhatt R, Karroum EG, Jambeih R, Collop N

Introduction: Adaptive servoventilation (ASV) has become an increasingly popular method of treatment for patients with central sleep apnea (CSA) and Cheyne Stokes Respiration (CSR) following initial favorable short term outcome studies. Data from the SERVE-HF study found increased mortality with patients on ASV therapy and low ejection fraction (EF < 45%). A practice wide quality improvement project was initiated to contact and re-assess Emory Sleep Center patients who were prescribed ASV.

Methods: A retrospective chart review in the electronic medical record was completed for ASV therapy. All patients on ASV for CSA/CSR were analyzed for an EF via echocardiogram or other cardiac imaging modalities. Demographic data was collected along with respiratory disturbance index (RDI), body mass index (BMI), EF and current PAP therapy. If the EF was ≤ 45%, the chart was reviewed to determine to see if patients were on or off ASV therapy.

Results: A total of 83 patients were analyzed. We found that the majority were males 78% (n=65). The average RDI was 55.9 ± 24.5 respiratory events per hour of sleep, average BMI was 31.4 ± 7.2 kg/m2, mean EF = 55 ± 11 %. Of the 83 patients analyzed, 70% (n=58) were on ASV, 15% (n=12) on CPAP, 8% (n=7) on BPAP, one patient on oxygen therapy, and 6% (n=5) were off all PAP. Of the 83 patients, 12% (n=10) were found to have an EF ≤ 45%. From this subgroup, 90% (n=9) were successfully taken off the ASV.

Conclusion: Our quality improvement project to address patients who are on ASV with EF < 45% was successful. We found that 90% of patients in this subgroup were removed from ASV therapy.

#26

Standardized templates for ultrasound reports improve care and resource utilization for children with appendicitis

Short HL, Partain KN, Patel A, Travers C, Heiss KF, Raval MV

Purpose: Right lower quadrant (RLQ) ultrasound (US) is the recommended initial imaging modality for evaluating appendicitis in children. The purpose of this study was to determine if implementation of a standardized US report that included secondary signs (SS) could decrease the use of CT or unnecessary admissions for observation.

Methods: Children (ages 5–18 years) with concern for appendicitis and who underwent RLQ US from 2014-2015 were retrospectively identified. A standardized US report that included appendix measurements and seven SS was initiated on January 1, 2015. SS of interest included periappendiceal hyperemia, appendicolith presence, echogenic fat, enlarged lymph nodes, bowel wall edema, free fluid, decreased peristalsis of surrounding bowel, or abscess. Outcomes including report compliance, CT use, observation admissions, and test characteristics were compared pre- and post-template implementation.

Results: We identified 387 patients in the pre-template period and 483 patients in the post-template period. In the post-template period, the reporting of SS increased from

5.4% to 79.5% (p<0.001). Despite lower rates of appendix visualization (43.9% to 32.7%, p<0.001) with US, overall CT use (8.5% vs 7.0%, p=0.41) and the negative appendectomy rate remained stable (1.0% vs 1.0%, p=1.0). CT utilization for patients with an equivocal ultrasound and SS present decreased (36.4% vs 8.9%, p=0.002) and admissions for observations decreased (21.5% vs 15.3%, p=0.02). In the post-template period, test characteristics of RLQ US for appendicitis including sensitivity, specificity, and accuracy improved.

Conclusions: Standardized reporting of SS on RLQ US decreases CT use and unnecessary admissions for observation in patients with concern for appendicitis.

#27

Barriers to quality research

Duggan EW, Lynde GC

In 1989, President George Bush signed into law the Omnibus Budget Reconciliation Act which ushered healthcare into the modern era where payment for services be based upon value delivered to patients. This focus on value and quality has taken many different forms since that time. Some projects, such as the STS National Database, examine trends in outcomes for patient populations and require local physicians to reflect on how their process and patient populations relate to the database reference. Other projects, such as the Surgical Care Improvement Project, collect data on the processes involved in good patient care and then infer outcomes based on large national samples. In their common program requirements for residency training published in 2007, the American College of Graduate Medical Education incorporated advocating for quality patient care into the core curriculum. With this advance, institutions such as Emory, now mandate the completion of quality improvement projects during residency. Little has been done, however, examining the importance of systems-level education, infrastructure, and mentorship required to complete projects successfully. This abstract details one group's experience in developing and executing a large group project.

#28

Improving quality of care through a fellow-led educational curriculum for Rheumatology nursing staff

Lipson AL, Brandt JE, Law KL

Interprofessional education is a key component of high quality health care, yet few opportunities exist for trainees to collaborate with nursing staff. Traditional medical structures separate physician and nursing education, with a lost opportunity for collaboration. We present a curriculum within Rheumatology, in which fellows provide workshops for our nursing staff, allowing for structured interprofessional interaction. We report our pilot curriculum design and initial data. Methods: We identified an opportunity for improving Rheumatology nursing staff education and clinical messaging through monthly didactics. Our fellows voiced interest in teaching opportunities and increasing interaction with our nursing staff. Thus, a fellow-led educational curriculum was born. Our primary outcome measure is learner satisfaction. Secondary outcomes include feedback about interprofessional collaboration and educational content. Results: Nurse feedback was positive. 88% of participants (N=9) rated the series at 5 on a 5-point Likert scale. Survey comments highlighted the most effective themes: "Exchange of info and being allowed to express ideas." "Very informative. I learned what to observe in [Rheumatoid Arthritis] patients." Conclusion: Our pilot, fellow-led educational curriculum for nursing has been a positive experience for both fellows and nursing staff, improving quality of care through interpersonal collaboration and improved medical knowledge. Initial data support expansion and formal study of this curriculum, including patient-focused endpoints such as messaging turnaround time and reduction in the number of times a clinical message is passed between provider and nurse before resolution.

#29

Are you ready for a primary care team report card? Results from a qualitative research study

Jhurani S, Shah M, Kulshreshtha A, Owens S

Purpose: Quality of care and performance vary widely across health systems and regions. There is a steady evolution of primary healthcare reform towards patient centered care and the assessment of providers based on quality measures. Our study explores the perceptions of health team members of a consolidated Teamlet Report Card on Quality (TRCQ) created to improve providers' performance on quality metrics and satisfaction among team members.

Methods: A focus group was conducted with ten team members at Emory Family Medicine Clinic – an academic NCHA Level 3 PCMH primary care clinic. Participants included physicians, nurses, medical assistants and administrative staff from six clinical teams. An interview guide was used and responses were transcribed. An iterative, team-based analysis process using two reviewers was conducted to identify common themes. In addition, a survey was completed by participants to quantify perceptions.

Results: Common themes included that the TRCQ could be used as a motivator for quality improvement and perhaps improve communication between team members. Incentives could be recognition of high performing teams, but not using monetary rewards or penalizing teams. For the TRCQ to be meaningful, the data has to be accurate and easier to understand. In agreement with common themes from the focus group, on the survey responses, a majority (>80%) believed that the TRCQ would further improve clinic metrics. 9 of 10 participants felt the report

card – both individually and as a team, would improve patient care.

Conclusions: TRCQ's can motivate teams to improve their patient care and identify opportunities for improvement. Poor data quality, variability in team members and their patient populations could however limit the effectiveness of TRCQ.

#30

Improving clinical teamwork: a tool for practice-based feedback

Cranmer JN, Baumgardner J, Cohen S, Dettinger J, Kestler E, Holme F, Walker D

Objective: Cohesive teamwork could maximize available resources and decrease preventable errors. However, few tools exist to measure teamwork among clinicians without a priori knowledge. An intuitive tool for quantitative, real-time feedback may improve teamwork and outcomes. This nested study created a tool 1) to rapidly measure clinical teamwork 2) be implemented with limited rater training and 3) provide real-time feedback.

Methods: 9 simulated obstetric emergencies were managed at 7 sites from a cluster-randomized emergency-focused trial in Guatemala. This study analyzed 53 achieved videos of the simulated emergencies; each emergency was coded for 57 TeamSTEPPS teamwork behaviors using the Performance Assessment for Communication and Teamwork-Video tool (PACT-V). Blinded coders randomly scored 77 emergencies. Standard Principal Factor Analysis (PFA) with varimax orthogonal rotation and post-model criterion were used to extract factors and surrogate variables.

Results: Domain-specific Kaiser-Meyer-Olkin criterion (KMO) for each domain ranged from 52.04-78.59%. 21 surrogate variables were extracted from the 57-item tool to create a short-form. Cohesion of the short-form's scales exceeded the original tool with Alphas (α) between 76.58-96.06%. Its anchors were adapted from Dreyfus' non-judgmental skill scales and formatted using "Balanced Score Card" logic.

Conclusion: The teamwork short-form's quantitative, simplified scales and intuitive typography could promote rapid teamwork measurement when few clinicians have a priori team training. The non-judgmental scales could promote self-reflection or non-threatening facilitator feedback. Its flexibility permits episodic feedback, longitudinal coaching or a broader culture of teamwork improvement.

#31

U.S. dialysis facility characteristics associated with racial disparities in access to the kidney deceased donor transplant waiting list

Gander JC, Plantinga L, Zhang R, Paul S, Pastan SO, Patzer RE

Background: Dialysis facility characteristics associated with racial disparities in access to the deceased donor kidney transplant waiting remain unknown.

Methods: Data on percentage of patients aged <70 waitlisted for kidney transplantation and other facility characteristics were obtained from the Dialysis Facility Report (2008-2011). All facilities with 25+ patients, ≥10% African American (AA), and ≥10% white patients were included. Facilities were categorized with a racial disparity if the %AA waitlisted was less than the %white waitlisted. Racial disparity magnitude was defined as the difference between the percentage of white and AA ESRD dialysis patients waitlisted. Logistic regression determined the facility characteristics associated with racial disparity in waitlisting.

Results: Among 2,637 U.S. dialysis facilities,1,253 (47.5%) dialysis facilities had a racial disparity in waitlisting; 111 facilities had 0% AAs waitlisted. The median racial disparity magnitude was a 9.9% difference (IQR 4.8%, 17.4%). With adjustment, each 25% increase in %AA (OR=1.1; 95% CI 0.9, 1.2), was associated with a 10% increased risk of waitlisting disparity. Each 10% increase (OR=0.9; 95% CI 0.87, 0.99) in percentage of patients with no nephrology care was associated with a 7% decrease in risk for waitlist disparity. Facilities with 100% of their patients on hemodialysis, vs. <100%, were 40% (OR=1.4; 95% CI 1.0, 2.0) more likely to have a racial disparity in waitlisting.

Conclusion: Racial disparities in access to the kidney deceased donor transplant waiting list widely vary across the U.S. Larger, HD-only facilities with greater proportions of AA patients may have greater likelihood of disparity and could make potential targets for interventions.

#32

A descriptive journey to build a data center in an academic quaternary health system for data science to support quality and safety.

Hertzberg VS, Shapiro S, Atkins J, Simpson RL

Objectives: Engage Emory leaders in emerging technologies, protecting participant privacy, data sharing, and data science giving clarity for healthcare outcomes in quality and safety.
Assess integrating patient-provider collaborations with data science technologies refining definitions of health and illness creating opportunities for interdisciplinary practice across continuum.

Demand patient center experiences as part of quality outcomes.
Provide interactive discussions on case studies of targeted strategies and focused topics exemplars by scientific experts and globally experienced executive leadership.
Provide incubator for network with others to share ideas, questions, and find potential collaborators for the SON new CDS.
Understand implications of the CDS for a learning healthcare system.

#33

Waitlist resource utilization and renal transplant outcome

Lynch RJ, Zhang R, Patzer RE, Larsen CP, Adams AB

Introduction: Renal transplantation offers unparalleled cost and survival benefits over dialysis, but remains limited by a chronic shortfall of donor grafts. Efforts to maximize the utility of a fixed donor supply must focus on longevity matching of donors and recipients. We have developed a novel approach to this problem by using waitlist hospitalizations as an aggregate measure of patient fitness.

Methods: United States Renal Data Systems patient and claims data for all adult renal transplant listings 2000-2010 with continuous primary Medicare coverage for one year after waitlisting were examined. Outcomes included waitlist survival, subsequent resource requirements, likelihood of transplant, and post-transplant outcome. Chi-squared statistics, Kaplan-Meier methods (log-rank test), and goodness of fit calculations (c-statistics) were performed.

Results: Among 51,111 patients, the percentages of patients admitted for 0, 1-7, 8-14, or 15+ days in the first waitlist year was 47%, 23%, 12%, and 18%. Heavily admitted patients were more likely to have high subsequent admission, and were less likely to go on to receive a transplant. In multivariable analysis, waitlist hospitalization was the strongest predictor of waitlist death (1-7 days HR 1.24 (95% CI 1.20-1.28), 8-14 days HR 1.49 (95% CI 1.42-1.56), 15+ days HR 2.07 (95% CI 1.99-2.15). Hospitalization improves survival model performance over EPTS alone.

Conclusions: In summary, hospitalization while waitlisted for renal transplant is an objective, readily ascertainable, and powerful predictor of excess resource utilization and inferior outcome. Incorporation of a rolling assessment of patient hospitalization has potential policy implications for maximizing value in renal transplantation.

#34

Improving access to hepatitis C care through a primary care-based hepatitis C screening and linkage to care program in an urban safety net health system

Miller L, Fluker SA, Dillard RL, Lom J, Park B, Wimberley W

Background: Grady Health System houses the Grady Liver Clinic (GLC) which provides primary care-based HCV care to Grady's underserved, largely African American population. HCV FOCUS was implemented in 2015 to expand upon a successful HCV screening and linkage to care program for Grady Primary Care Center (PCC) baby boomers. FOCUS goals included 1) expanding screening/linkage to 5 Grady Neighborhood Health Centers (NHCs) and 2) introducing an EMR reminder to facilitate screening.

Methods: An EMR reminder (Epic best practice advisory) was introduced in 12/2015. Simultaneously, primary care providers received individualized education sessions on HCV screening. For this ongoing project, HCV test data from all partner sites is collected bi-weekly via custom lab report, and patients with positive or pending HCV RNA tests are linked to GLC by a patient navigator. Data on patient flow through the HCV care cascade from screening to HCV RNA testing to linkage to care are collected.

Results: During the first 4 months of HCV FOCUS, 1,424 patients were screened and 8% are HCV Ab positive, 43% have been HCV RNA tested and 73% of those are viremic. Almost half have been linked to care.

Conclusion: In only 4 months, FOCUS has been successful in 1) expanding a screening and linkage to care program to 5 additional sites resulting in 1,424 additional persons tested 2) utilizing EMR innovation to facilitate HCV screening and 3) using a patient navigator and onsite HCV clinic to achieve high linkage to care rates for this difficult to reach, vulnerable population.

#35

Intervention development for the Allocation System Changes for Equity in kidNey Transplantation (ASCENT) Study

Smith KD, Gander J, Basu M, Pastan SO, Mohan S, Escoffery C, Plantinga L, Kalloo S, Green G, Berlin A, Renville G, Browne T, Turgeon N, Caponi S, Krisher J, Patzer RE

Background: Recent changes in the kidney allocation system (KAS) are expected to reduce racial disparities in kidney transplantation (KTx). However, dialysis facilities may not be aware of how KAS could improve equity in KTx access among patients, making educational outreach crucial.

Methods: We assembled a diverse, interdisciplinary Dissemination Advisory Board (DAB) of stakeholders in July 2015 to oversee intervention development for the Allocation System Changes for Equity in kidNey Transplantation (ASCENT) Study, a multicomponent, randomized clinical effectiveness study in ~750 U.S. dialysis facilities among multiple ESRD networks with racial disparities in waitlisting.

Results: The DAB is composed of academic faculty, KTx physicians, dialysis facility medical directors, patients, patient advocacy groups, a behavioral scientist, a social worker and government regulatory agency representatives. Divided into 3 subcommittees based on targeted intervention groups (patients, staff, and dialysis facility medical directors), DAB members are developing a multicomponent intervention (2 educational videos, a webinar, and performance feedback reports) to educate targeted groups about KAS changes and their impact on dialysis patients and racial disparities in KTx, specifically emphasizing the improving waiting time for ESRD patients who have spent years on dialysis.

Conclusion: Formative testing of ASCENT intervention materials will be conducted to ensure they are tailored to each targeted group. In the large clinical effectiveness study, we will administer the validated materials to ~750 dialysis facilities with racial disparities in KTx waitlisting and assess their impact on improving KAS knowledge among medical directors and on reducing disparities in KTx waitlisting.

#36

The impact of the new kidney allocation system on racial disparities in kidney transplantation

Melanson TA, Basu M, Plantinga L, Pastan S, Patzer R

Prior to the new kidney allocation system (KAS) implemented 12/4/2014, significant African American (AA) vs. white racial disparities existed in access to kidney transplantation (KTx) among waitlisted patients. Preliminary results show that the proportion kidneys given to AAs has increased, it is unknown whether this has eliminated racial disparities or if this effect varies across geographic regions. We sought to describe access to KTx among waitlisted patients by race and region before and after KAS implementation.

We examined 169,967 waitlistings for KTx from the United Network for Organ Sharing standard analytic file from Jun 2013-Aug 2015. We calculated the proportion of waitlisted patients who received a deceased donor KTx by region/race/month. This allows examination of how likelihood of KTx varies across racial groups and time. We conducted an interrupted time-series analysis to analyze the impact of KAS on racial groups and to analyze how this impact varied across geographic regions. We also mapped the absolute difference in the proportion of transplants by race by UNOS region using ArcGIS.

Prior to KAS implementation, the likelihood of receiving a KTx for patients on the waitlist was 0.8% vs. 1.05% (AAs vs. white). The coefficient for the interaction between AA and the post-KAS indicator suggests that KAS had the effect of increasing the rate of KTx for AAs by 0.36 percentage points (a 45% increase relative to the pre-KAS period). Geographic variation in the impact of KAS on AAs was found to be insignificant.

Following implementation, likelihood of KTx significantly increased for AA patients on the waitlist. Longer-term follow-up is needed to determine if improvement in KTx access is sustained and whether geographic variation arises.

#37

Long-acting reversible contraceptive use through Ryan LARD program grant at Emory

Fu L, Meyyazhagan N, Koziol B, Jamieson D, Dolan M, Cwiak C

Objectives: To characterize the patient population who received long acting reversible contraception through the Ryan Long Acting Reversible Contraception (LARC) Program at Emory University; 2. To investigate continuation rates for LARC methods; 3. To explore reasons for discontinuation of LARC methods.

Methods: Our population included the patients at Emory who received LARCs through the Ryan LARC Program grant. The first phase of the study characterized this patient population by baseline data collected since 2008 according to grant reporting requirements. The second phase of the study was a retrospective chart review of a randomly-selected cohort of patients. Our outcome was LARC discontinuation, including: removal, expulsion, or pregnancy. If LARC method was discontinued, we explored the reasons for discontinuation (e.g. method failure, complications, side-effects, expulsion, patient request, etc.).

Results: Since 2008, we have descriptive baseline data for over 4800 patients who received a LARC method through the Ryan LARC Program. These patients are predominantly African-American, unemployed, uninsured, and have not used a birth control method in the past. Overall continuation rate of LARC method in our selected cohort is 58.5%. The most common complaints which led to discontinuation are bleeding pattern changes and discomfort.

Conclusion: LARC devices are among the safest contraceptive methods. Through the Ryan LARC Program at Emory, we were able to provide effective birth control for over 4800 women who are most vulnerable to birth control method failure and lack of access.

#38

Worse depressive symptoms, rather than a history of depression are associated with worse outcomes in patients with cardiovascular disease

Hajjari J, Hayek SS, Ko YA, Awad M, Hosny KM, Patel K, Hartsfield J, Bhimani R, Momin S, Aida H, Quyyumi, AA

Introduction: Depression is more common in patients with CAD and is associated with worse mortality. While the association between depression and outcomes is well established, it is unclear whether a diagnosis of depression is associated with outcomes independently of the severity of depressive symptoms, and whether treatment of depression modifies that association

Methods: 5359 patients underwent LHC between 2004-13 at Emory and were recruited into the EC Biobank. Patients reported their medical history through questionnaires, and their medical records were reviewed to confirm a prior diagnosis of depression or treatment with antidepressants. Patients completed the Patient Health Questionnaire-9 to screen for depression. Patients were followed up 4.5 years for outcomes. Kaplan-Meier survival analysis and Cox proportional hazard model were used to analyze the association between a history of depression, depressive symptoms, anti-depressant therapy and all-cause death

Results: 1242 of patients has depression diagnosis, and 69% were on antidepressant. 784 patients had at least moderate depressive symptoms by PHQ-9>10. Patients with PHQ-9>10 had worse survival irrespective of an underlying diagnosis of depression or treatment status (Log-Rank P<0.001). In patients with PHQ-9<10, there were no differences in survival in patients with and without a previous diagnosis of depression. In multivariable analyses adjusting for demographics, clinical characteristics, depressive symptoms and diagnosis; a PHQ-9>10 was associated with a 2-fold increase in the risk of all cause death Depressive symptoms, rather than a diagnosis of depressive, was predictive of all-cause death. These findings suggest that successful treatment of depressive symptoms may improve prognosis of patients with depression

#39

"They took my blood ... But didn't tell me anything": Patient perceptions of exchange in chronic kidney disease monitoring

Vandenberg AE, Echt KV, Bowling CB

Patient-centered care has been embraced by the Veterans Health Administration as a way to improve care by shifting it towards patient goals and shared decision making. In chronic kidney disease (CKD) goal setting and decision making are complicated by the absence of symptoms, treatments, and predictable disease trajectories. CKD patients are routinely monitored for blood creatinine, urinary albumin, and electrolytes such as potassium but not necessarily given medication. We investigated CKD patient perceptions of monitoring with an aim to improve the delivery of their care. We conducted six focus groups with a total of 30 Veterans with chronic kidney disease (mean age 75 years) at the Atlanta VA. Respondents frequently framed the physician-patient monitoring encounter in terms of inequity (lack of reciprocity). We analyzed focus group transcript content related to physician-patient encounters by language or actions of giving and receiving. Respondents within and across groups perceived an imbalance between what they give to their healthcare providers and what they receive from providers during the monitoring process. CKD patients described their contributions intimately as body fluids (blood, urine), body images (xrays, ultrasound), time, effort, and trust. They perceived provider contributions in turn to include diagnoses, lab results, medicine, warnings, and advice. The most frequent expected but unfulfilled contributions were information about kidney disease, explanation of test results, and a health action plan. This study points to a perceived gap in understanding of chronic kidney disease management that could be targeted to motivate better patient-centered care.

#40

Teaching life-skills to adults with autism spectrum disorder: steps toward quality improvement

Nikolaou L, Thomas T, Cubells JF, Ousley O

Transition programs have the potential to prepare and equip individuals with autism spectrum disorder (ASD) with the skills necessary for adult life. There is a lack of appropriate transition services, as well as a dearth of evaluation research regarding such services. The myLIFE program, a component of Emory Autism Center's Adult Services, provides opportunities for adults with ASD to engage in social interactions within naturalistic settings. We present results from a quality improvement study to examine current patient and family-member satisfaction with the program, in order to inform future directions of the myLIFE program. The study took place at the Emory Autism Center, from March 24th to April 1st 2016, during the group meetings of the myLIFE program participants. Data were collected by conducting a qualitative survey among 45 program participants, using a self-report questionnaire. The survey was structured accordingly to reflect two basic time dimensions: 1) members' current opinions and level of satisfaction in relation to the program and, 2) members' suggestions regarding the future of the program. Study results are reported according to thematic categories (e.g., things participants like the most about the myLIFE Program, type of skills participants would like to practice in the future) and can be used as a guide for future planning and quality improvement.

#41

Effect of culture acquisition time relative to antibiotic administration on diagnostic yield

Murphy DJ, Overton EO, Steinberg LP, Jacob JT

Introduction: Sepsis is a leading cause of hospitalizations. The presence or absence of bacterial growth in blood, urine and respiratory cultures can help guide appropriate care. Clinical practice guidelines support obtaining cultures prior to antibiotic administration, but culture collection is often delayed. We describe the effect of culture acquisition time relative to antibiotic initiation on culture yield.

Methods: We retrospectively analyzed cohort of inpatients who had at least 1 blood culture set, 1 urine culture, or 1 respiratory culture collected 6 hours before or after first antibiotic. We used a segmented logistic regression analysis to model the independent effect of culture collection time relative to antibiotic administration on the odds of any bacterial growth, adjusting for patient demographics, severity of illness, and culture collection location.

Results: The adjusted odds of blood, urine, and respiratory culture growth did not change during the 6-hours prior to antibiotic administration. During the first hour after antibiotic administration, the adjusted odds of blood culture growth decreased by 18% every 15 minutes (OR: 0.82, CI: 0.71-0.95), with no further change over the next 5 hours. The odds of urine culture growth decreased by 19% every 15 minutes (OR: 0.81, CI: 0.76-0.86) during the first hour, and continued to decrease by 3% every 15 minutes over the next 5 hours. The odds of respiratory culture growth did not change during the 6-hours after antibiotic administration.

Conclusions: These results highlight the importance of collecting blood and urine cultures prior to administering antibiotics, since delays less than 1 hour significantly reduce the odds of any bacterial growth, thereby preventing clinicians from making more informed choices.

Presenting Author by Poster Numbers

The top three scoring abstracts that were chosen for oral presentation are located on p. 5-6.

Poster Numbers by Presenting Author

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Rachel Patzer, PhD, *Co-Chair*
Kathy Griendling, PhD
David Howard, PhD
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Kimberly Applegate, MD
Nathan Spell III, MD
Barrett Bowling, MD, MSPH
Carolyn Reilly, PhD

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Contact us at DOMresearch@emory.edu with any questions about this event. Slides will be posted at http://bit.ly/QualityDay2016 when available.