This edition of the Clinical Effectiveness Report highlights the work presented at the 9th Annual Quality and Safety Symposium, held on May 6. The Symposium received poster submissions from more than 60 multidisciplinary teams. In addition, there were 27 full-grant applications submitted for consideration for the inaugural Innovations Grant Program. We awarded grants to two exemplary projects.

While attending the symposium, I was struck by the remarkable number of initiatives and projects of which I was not already aware. As CMO, and one of the individuals responsible for overseeing quality and safety at UCM, you might think this was distressing.

Quite the contrary – I was inspired by the creativity and ingenuity coming from our colleagues at the bedside, in the clinics, and in other departments throughout our organization. They pursued these projects not because they were told to by those of us charged with promoting quality and safety. They did it for our patients.

This observation is an important reminder of the power and importance of transparency in our work around quality and safety.

Transparency is, in essence, the entire motivation behind the Clinical Effectiveness Report. In each edition, our teams share details about our current performance (scorecard, page 3), follow up on important harm events and near misses (page 8), highlight awards and recognition (back cover) and feature programs that may be new to you.

But our commitment to transparency runs even deeper. We have been listening to feedback from the annual culture of safety survey, as well as in our meetings and conversations with many of you over many months. You have told us that you want to know more about where we stand, about what we are doing, and how your concerns are being addressed.

Every day, we aim to meet this challenge. Transparency is essential to the success of our quality and safety programs, and therefore to UCM itself.

In addition to this report, you will see many other examples of our commitment: ready access to performance scorecards; changes to a more inclusive root cause analysis format; standardized operational reports to all UCM staff; and availability of leaders to engage in team and work area meetings.

Each of you deserves to know that leadership is as committed to patient safety, quality and an enhanced experience for our patients and families as you are. These are essential values that tie all of us together. We are learning from both our successes as well our shortcomings.

I want you to feel emboldened and empowered to share your own experiences and achievements to move us closer to our shared goals. We are re-earning our reputation and marching forward to national leadership in this work. I am so fortunate to have all of you as partners on this journey.

Sincerely,

Stephen Weber, MD
Chief Medical Officer
Vice President for Clinical Effectiveness
At the University of Chicago Medicine, for example, we are tracked externally on more than 450 measures by various agencies and organizations, and we follow more than 50 Clinical Effectiveness measures internally. In fiscal 2014, we highlighted six specific measures that we felt were true UChicago Medicine-wide priorities. This small number of Priority Metrics helps us focus on critically important goals for the Medical Center, and they reflect the diversity of our work to improve patients’ care.
University of Chicago Medicine leaders celebrate award winners in the new UCM Innovations Grant Program at the 9th Annual Quality and Safety Symposium on May 6. Alex Langerman, MD, received a grant to improve surgical efficiencies; Tina Shah, MD, won a grant to examine ways to reduce readmissions by patients with an exacerbation of COPD.
The University of Chicago Medicine awarded the first two grants under the inaugural UCM Innovations Grant Program in May, highlighting its commitment to improving quality and safety scholarship throughout the institution and the country.

A team of 17 operational and research leaders reviewed a total of 27 full grant applications, rigorously assessing methodological strength, operational innovation, and feasibility.

National funding agencies have generally overlooked the growing field of health care delivery science, a discipline in which the University of Chicago Medicine is quickly gaining a national prominence.

The award celebration was the culmination of the 9th Annual Quality and Safety Symposium, at which improvement teams throughout University of Chicago Medicine presented more than 60 posters highlighting efforts to improve the clinical effectiveness of care UCM delivers to its patients.

We congratulate Drs. Alexander Langerman and Tina Shah on their winning proposals, as they represent the university’s commitment to improvement.

**LANGERMAN:**

‘PRUDENCE’ SURGICAL COST REDUCTION INITIATIVE

Dr. Langerman’s study uses Lean-based methodology to find ways to cut operating room costs from wasted and unnecessary surgical supplies.

“As a practicing surgeon, I am inspired by the challenge of coordinating complex surgical cases - the staff, supplies and equipment,” he said.

“The research we are conducting as part of this grant will have impacts far beyond UCM as we develop better ways to treat patients and improve healthcare delivery,” added Langerman.

**SHAH:**

IMPROVING THE HEALTH OF OUR PATIENTS: THE COPD READMISSIONS INTERVENTION

Dr. Shah’s proposal will use a novel screening algorithm to better identify patients with exacerbated COPD (chronic obstructive pulmonary disease) and to evaluate a multidisciplinary program to improve the health management of these patients and reduce readmissions.

Beginning in October, hospitals will be subject to penalties by the Centers for Medicare & Medicaid if they experience excessive readmissions of Medicare patients for COPD.

The overall treatment program includes medication reconciliation prior to discharge, patient education on inhalers, and a COPD action plan to guide home management if symptoms worsen.

Shah’s is the first study of COPD readmissions, from both a quality and efficiency point of view, seeking to fill a gap in the medical literature.

She said the research has wider ramifications beyond COPD, as her group seeks to create a methodology that can be used to care for a given population of people who have multiple chronic diseases.

“I see this as a blueprint that we can then apply to other diseases,” she said.
We have made tremendous progress over the past decade in the evolution of our approach to quality and safety at the University of Chicago Medical Center. A great deal of this success is due to the investments made in people and infrastructure.

The concerted effort to educate our current faculty and staff, recruit new leaders invested in quality and safety, and build a support system that can perform the work needed to ensure UCM is a top performer in quality and safety, means that this hospital is safer now than it was 10 years ago.

The success of this endeavor is the clear result of the collaboration between our physicians, nurses, and other clinicians. Multidisciplinary teams have come together to not only identify problems, but also solve them.

For example, in April, our adult emergency department did not spend one day on diversion.

To put this in perspective: when UCMC Chief Operating Officer Jason Keeler, Vikas Ghayal, Director of Emergency Services, Dr. Linda Druelinger, Medical Director of the Adult Emergency Department, and others began working to solve this problem, our diversion rate was the highest in the region with almost 300 hours spent on diversion each month. (See Figure 1)

Among the most exciting transitions for me to witness has been the growth of non-physician participants. Nurses, APNs, pharmacists, infection control practitioners, and others, are not only participating on quality and safety teams, but leading them alongside their physician colleagues.

The Department of Nursing, for example, has led a multidisciplinary effort to reduce the frequency and severity of pressure ulcers across the organization and this year we have seen a greater than 50% reduction in Stage 3 & 4 ulcers. (See Figure 2)

We have also seen a dramatic decrease in the frequency of falls with patient injury – just to cite a few examples.

We recognized that in order to drive real change across the organization we needed to demonstrate data-driven results. The Medical Center invested in the growth of our Center for Quality and expanded performance improvement to include data analytics.

Center for Quality Director Mike Wall, PharmD, MBA, CPHQ, and his team are now instrumental in helping clinicians across the medical center demonstrate the validity of their quality and safety projects through the use of analytics.

The success of this endeavor is the clear result of the collaboration with our physicians, nurses and other clinicians.
Prior to Mike’s arrival, we were struggling to become top performers in basic quality metrics around pneumonia, heart failure and infection control measures for surgical patients. We are now top performers across all the core measure categories.

About eight years ago, the Medical Center invested in our faculty to encourage them to assume leadership positions in quality and safety. We now have a core of clinical expertise to collaborate with us in tackling complex issues.

I receive emails from Andrew Davis, MD, MPH, an internist who specializes in integrative and preventative care, on a weekly basis with new ideas on how we can use our electronic health record to pro-actively predict an acute change in a patient’s condition, providing us with opportunities to intervene versus rescue.

Vivek Prachand, MD, an expert in minimally invasive abdominal surgery, has partnered with Phyllis Turner, MS, RN, Director, Risk Management & Patient Safety, to lead work groups across the Medical Center to become best performers on patient safety indicators related to bleeding complications and adverse outcomes related to the technical performance of our surgeons.

As a result, UCM achieved a #1 ranking in the patient safety indicator related to accidental punctures and lacerations among our surgical patient population. The team has also worked closely with Sylvia Garcia-Houchins, Director, Infection Control Program, and our infection control colleagues to decrease the rate of surgical site infections in high risk patient populations.

We recently received an “A” grade from the Leapfrog Survey Group, one of the most prestigious quality monitoring organizations in the country.

Institutions are rated on 28 different performance metrics. More than five out of six hospitals do not achieve this high of a score. We are one of only 251 hospitals across the country to achieve an “A” grade in all five measurement periods since grading began.

The last metric I will mention is probably the most impressive.

UCMC has dramatically improved our benchmark performance on leading patient safety indicators.

In 2010 UCM was ranked 89 out of 120 academic medical centers within the University HealthSystems Consortium (UHC) for cumulative performance on a set of safety and quality indicators. I’ve mentioned some of them already: Falls with injury, severe pressure ulcers, accidental punctures and lacerations just to name a few. Obviously we were not proud of this ranking.

As you can see, we are now ranked 18 – a ranking we all should be incredibly proud of.

But what this metric also demonstrates is the commitment we had from our leaders to focus on what mattered – metrics that truly make a difference in the outcomes of our patients.

There are currently over 400 publicly reported quality metrics. With input from everyone, we have identified the top 20-40 indicators that our clinicians truly believe will have the greatest impact on the greatest group of patients. These are the indicators we will continue to track and reinforce with our front line staff in a very transparent manner.

A year or two from now, we hope to stand before you and demonstrate results similar to what we have seen over the past several years in falls, pressure ulcers, and accidental punctures and laceration.

We have come a long way, but this is one journey that will never end.
At the University of Chicago Medicine, patient care events are analyzed to identify opportunities for improvements in safety and clinical quality. For fiscal year 2014, 6,852 variance, near miss or harm events were reported. From these reports, 45 root cause analyses were conducted. Here are some examples of the work produced by these multidisciplinary teams.
UNTIMELY REPLACEMENT OF CRASH CART USED TO RESUSCITATE PATIENTS

BACKGROUND:
Two adult patients were admitted to a patient care area in Mitchell Hospital. The first patient had a cardiopulmonary arrest. He was resuscitated. Several hours later, the other patient had a cardiopulmonary arrest. The used crash cart had not been replaced requiring the nursing staff to retrieve a crash cart from a different patient care area.

WHAT IT DEMONSTRATED:
A faster crash cart replacement process is needed.

PLAN OF ACTION AND OUTCOME:
Activation of a Dr. CART page will trigger immediate delivery of a new crash cart to the patient care area. By using Lean analysis, this development will eliminate any potential for delay in retrieving this life-saving equipment.

DELAYED NOTIFICATION OF PRIMARY SERVICE AFTER CARDIOPULMONARY ARREST

BACKGROUND:
Two weeks after head/neck surgery, an adult patient was transferred from Otolaryngology/Head and Neck Surgery (OHNS) service to a medicine service for continued management of his chronic medical condition. When the patient later had a cardiopulmonary arrest, the code team and the medicine team were paged to the patient’s room but the page to the OHNS team was delayed.

WHAT IT DEMONSTRATED:
OHNS should be a primary responder for airway management as the service continues to follow a patient.

PLAN OF ACTION AND OUTCOME:
New process flows were implemented to promote timely notification of the OHNS resident on-call for airway management of off-service post-operative patients. An “OHNS notify order” will be entered in Epic by the admitting service. The admitting nurse will write on the white board in the patient’s room a reminder to page OHNS for airway management. The Call Center added a duplicate listing in the paging directory to search by OHNS or ENT.
There are multiple challenges in receiving, interpreting, and storing outside radiologic images. Radiology participated in a Kaizen event with support from the Operational Excellence team and Patient Safety to standardize the process of receiving, interpreting, and storing outside radiologic imaging studies.

An adult patient was admitted for evaluation and treatment of a specific condition. Near the end of her hospital stay, a compact disc of outside hospital radiologic studies was brought in to be downloaded and viewed at an upcoming multidisciplinary team meeting. Due to time constraints and logistics, the CD was delivered to Radiology after the patient’s discharge but prior to her upcoming clinic visit. On viewing of the images, a previously undiagnosed hip fracture that had been present on admission was identified. The patient was contacted and treated.

Challenges of Timely Viewing and Storing of Outside Radiologic Images

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Drug-Drug Interaction

BACKGROUND:
A pediatric patient who takes Depakote for seizure disorder was prescribed Ertapenem to treat an infection. Due to a drug-drug interaction, Depakote levels declined and became non-therapeutic for seizure prevention.

WHAT IT DEMONSTRATED:
Providers need to be warned of this drug-drug interaction.

PLAN OF ACTION AND OUTCOME:
A new interaction level of “UCM Severe” was created in Epic to warn ordering providers of the potential drug-drug interaction for patient’s prescribed Depakote as an anti-seizure agent. Additional best-practice alerts for medications safety will be added to EPIC on an on-going basis.
**DELAYED DELIVERY OF A LIFESAVING DRUG**

**BACKGROUND:**
A six-day-old patient presented to the Comer Emergency Room with suspected diagnosis of interrupted aortic arch. Prostaglandin was ordered to delay closure of the patent ductus arteriosus (PDA), but there was a delay in administering the medication - which was initially ordered as routine.

**WHAT IT DEMONSTRATED:**
Prostaglandin requires a delivery time of 15 minutes or less - faster than the defined STAT delivery parameter. The process was complicated by the multiple steps involved in ordering urgently needed medication.

**PLAN OF ACTION AND OUTCOME:**
The Prostaglandin order was changed to STAT only in EPIC. A process was put in place to treat this drug as a “super” STAT priority. The pharmacy will now assess whether additional drugs should be added to this class.

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**PROCEDURE DONE ON INCORRECT LIMB**

**BACKGROUND:**
A patient underwent a femoral nerve block of the right side instead of the left, in preparation for an elective left total knee arthroplasty procedure.

**WHAT IT DEMONSTRATED:**
The need for a standardized site identification process linked to the surgeon’s marking on the patient when performing a final Time Out prior to initiating a nerve block. All nerve block supplies should be present in the room prior to beginning the Time Out.

**PLAN OF ACTION AND OUTCOME:**
An additional block cart is being obtained for faster availability of all needed supplies for a block to prevent the need for the anesthesiologist to leave the room to obtain supplies. The DACC created a “Final Verification/Time Out Procedure for Regional Blocks.” A line was added to the Time Out field for the nurse to document “Performed time out with Anesthesia Team.”
The University of Chicago Medicine Clinical Effectiveness (CE) Program was established in 2011 under the leadership of Chief Medical Officer Stephen Weber, MD. The CE Program builds upon already established and successful UChicago Medicine strategies in patient safety, risk management, infection control, and patient experience and engagement. The Program collaborates with clinical and administrative leaders to oversee clinical practice across the medical campus to ensure patient safety, clinical quality, efficient and rational practice, and outstanding patient experience. Under CE, the quality program has been completely redesigned with a focus on rigorous analytics and performance improvement. In addition, the Patient Experience and Engagement Program (originally, the Office of Patient Experience) was brought under the broader CE umbrella to further our commitment to patients and their families.

Certifications, Accreditations & Awards

- John Alverdy, MD, the Sara and Harold Lincoln Thompson Professor of Surgery and Executive Vice Chair of the Department of Surgery, was named President-elect of the Surgical Infection Society. He will assume the presidency of the group, whose 550 members specialize in the study of surgical infections, in April 2015.

- UCM Respiratory Care Services received the Quality Respiratory Care Recognition Award for 2014 from American Association for Respiratory Care.

- University of Chicago Medicine earned an “A” Grade in Leapfrog’s Spring 2014 survey. UCM is one of only 251 U.S. hospitals to earn an “A” in all five previous ratings surveys.

- UCM received the Leapfrog Certification for fully implemented Computerized Physician Order Entry for 2014.

- Katherine Pakieser-Reed, RN, PhD, Sylvia Garcia-Houchins, RN, MBA, CIC, and Megan Miller, MD, reported on “Successful Institution-Wide Sustained Reduction in Central Line Associated Bloodstream Infection (CLABSI) Using a Multi-disciplinary Approach” on July 24 at Sigma Theta Tau International’s 25th International Nursing Research Congress in Hong Kong. Pakieser-Reed, Sally Black, RN, MSN, MBA, OCN, and Emily Lowder, RN, PhD, NE-BC, also presented “Activation Planning: Preparing a Workforce for Expansion into a New Healthcare Facility.”

- Kathleen Beavis, MD, FCAP, FASCP, and Sylvia Garcia-Houchins, RN, MBA, CIC, were named to a statewide task force on CRE, carbapenem-resistant enterobacteriaceae, a strain of germs that resist antibiotics, by the Illinois Dept. of Public Health. Beavis is an Associate Professor in the Department of Pathology and Director of the Microbiology and Immunology Laboratories and Garcia-Houchins is Director of the Infection Control Program.

- David Meltzer, MD, PhD, Associate Professor of Medicine and Chief, Section of Hospital Medicine, received the 2014 John M. Eisenberg Excellence in Mentoring Award from the Agency for Healthcare Research and Quality (AHRQ).

- A team from the University of Chicago Medicine Comprehensive Cancer Center has received a five-year, $3.9 million award from the National Cancer Institute to serve as a Lead Academic Participating Site for the newly created National Clinical Trials Network. The team scored the best possible score in the highly competitive process.

- Kathleen Mora, MD, FACP, FASCP, and Sylvia Garcia-Houchins, RN, MBA, CIC, were named to a statewide task force on CRE, carbapenem-resistant enterobacteriaceae, a strain of germs that resist antibiotics, by the Illinois Dept. of Public Health. Beavis is an Associate Professor in the Department of Pathology and Director of the Microbiology and Immunology Laboratories and Garcia-Houchins is Director of the Infection Control Program.