

**Patient Safety & Quality Improvement Research Grant Program
2015 Awardees**

Funding Source	Principal Investigator	Department/ Division	Project Period	Project Title	Project Description
BJHF	Ronald Jackups Jr, MD, PhD	Pathology & Immunology	4/1/15-3/31/16	Development of Clinical Decision Support Tools for Patient Blood Management	Transfusion is a life-saving medical procedure used in many clinical situations, but has recently been associated with overuse and life-threatening complications. Clinical decision support (CDS), including the use of interruptive alerts at the time of transfusion order entry, has been used to educate clinicians and prevent inappropriate transfusion, but existing tools are rudimentary, relying on non-specific triggers such as single laboratory values (hemoglobin concentration), resulting in suboptimal reduction of inappropriate transfusion. We plan to extract and analyze multiple variables from several hundred thousand transfusion events at two BJC hospitals in order to design formulas to more accurately predict the risk of inappropriate transfusion. We then plan to incorporate these formulas into sophisticated CDS alert systems to minimize inappropriate transfusion by educating clinicians at the time of order entry. We expect a 50% reduction in inappropriate transfusion, and will iteratively optimize the alerts throughout the study to meet this goal.
FPP	David Limbrick, MD	Neurological Surgery	4/1/15-3/31/16	Management of Children with Traumatic Brain Injury after Head CT	Traumatic brain injury (TBI) is among the most common and most harmful pediatric health problems in the United States. Most children experience mild TBI (mTBI), which is responsible for one-third of the 50,000-60,000 annual pediatric TBI hospital admissions. While substantial resources have been invested to determine which children with mTBI require head CT, how CT findings should be integrated with other clinical information to guide safe and efficient management practices remains unclear. To address this uncertainty, this study will: 1) utilize a large multicenter dataset to determine the appropriate level of care for children with mTBI following head CT; 2) develop a survey to assess influences on physician decision making and barriers to evidence-based practices in the management of children with mTBI after head CT. This study will significantly advance the evidence-based management of children with mTBI and will set the stage for future implementation research in this important field.
FPP	Elna Nagasako, MD, PhD, MPH	DOM: General Med Sciences	4/1/15-3/31/16	Hospital Discharge Summary Tracking System for Community Health Center Patients	The handoff from hospital providers to providers in the community is the foundation for safe transitions of care for patients traversing the inpatient and outpatient settings. However, there is currently no robust tracking system to verify that discharge summaries reach community health center primary care providers. In response to results from a 2014 survey of community health center primary care providers describing gaps in provider communication at hospital discharge, this project seeks to evaluate and improve discharge summary transmission from inpatient WUSM faculty at Barnes-Jewish Hospital to community health center providers by creating a hospital discharge summary tracking system in collaboration with the St. Louis Integrated Health Network. This project will 1) audit the current rates of discharge summary transmission to community health center providers and 2) construct and evaluate a sustainable robust real-time method for monitoring discharge summary receipt.
FPP	Rakesh Rao, MD	Pediatrics: Newborn Med	4/1/15-3/31/16	Ensuring Safe Peri-Operative Handoffs	Critically ill newborn infants in the Neonatal Intensive care unit (NICU) often require surgical interventions that vary from establishment of vascular access to exploratory laparotomy or closure of abdominal wall defects. These procedures involve multiple providers and disciplines including surgery, anesthesiology, and neonatology. In this high risk population and complex environment, ensuring that care is transitioned between different providers safely and effectively in a timely manner is critical for improving patient safety through prevention of medical errors. As part of a national consortium, we have established a structured and standardized hand-off process for transfer of care from the anesthesia to the NICU team in the post-operative period in order to improve peri-operative hand-off processes, improve patient safety and minimize adverse events. We propose to develop similar processes for hand-offs in the pre-operative phase, transition this information to electronic format for easy availability and retrieval to improve patient safety and outcomes.
BJHF	Garry Tobin, MD	DOM: Endocrinology, Metabolism	4/1/15-3/31/16	Improve Glucose Management for BJH Inpatients with Severe Hyperglycemia	Strategies for a hospital wide and system wide glucose control effort to prevent and treat severe hypoglycemia were successfully addressed and implemented by our WU/BJH diabetes team in 2011-2012. Our diabetes team plans to use a similar process to address severe hyperglycemia at BJH. We further plan to recommend clinical change - persuading WU/BJH practitioners regardless of discipline to know and understand the standards of care for inpatients with diabetes. Our aims are to assess staff knowledge and competencies, enhance competencies, provide education, develop/share de-identified case-based curriculum based on data analysis of 50 severe hyperglycemia events at BJH.
BJHF	Andrea Vannucci, MD	Anesthesiology	4/1/15-3/31/16	Electronic Capture of Airway-Related Adverse Events in Adult General Anesthesia	Unplanned reintubation and delayed extubation after general anesthesia are significant adverse events associated with escalations of care, untoward patient outcomes, and increased costs. The recognized risk factors for these events are patient comorbidities and side effects of surgery and anesthesia. This study will focus on anesthesia-related complications. We aim at assessing the incidence of early reintubation and delayed extubation in a general patient population and at ascertaining the role of potential risk factors like the intraoperative use of specific anesthetic drugs and intravenous fluids (considering their doses and administration times in relation to the unfolding of surgery), and mechanical ventilation's modalities. The main goal is to identify modifiable patterns of practice associated with these complications that can be the object of patient safety interventions. The secondary aim is to develop and validate a new search strategy for adverse events based on querying data automatically stored in the anesthetic electronic record.