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## SELECTED PUBLICATIONS
TEXAS A&M UNIVERSITY
SCHOOL OF PUBLIC HEALTH
Awarded the Phase I Industry/University Cooperative Research Center (I/UCRC) grant through the National Science Foundation (NSF).

LEAD SITE | FIRST UNIVERSITY SITE
Texas A&M University

SECOND UNIVERSITY SITE
Georgia Institute of Technology
Site director:
Eva Lee

CHOT DIRECTOR
Larry Gamm
6 INDUSTRY MEMBERS

FOURTH UNIVERSITY SITE
Pennsylvania State University
Site director:
Harriet Nembhard
16 INDUSTRY MEMBERS

FIFTH UNIVERSITY SITE
Florida Atlantic University
Site director:
Ankur Agarwal
19 INDUSTRY MEMBERS
22 RESEARCH PROJECTS

SIXTH UNIVERSITY SITE
Georgetown University
Site director:
Eva Lee

CHOT DIRECTOR
Larry Gamm
6 INDUSTRY MEMBERS

SEVENTH UNIVERSITY SITE
University of Louisville
Site directors:
Christopher Johnson
J‘Aime Jennings

EIGHTH UNIVERSITY SITE
University of Nottingham
Site director:
Stephen Timmons

10 YEAR ANNIVERSARY
CHOT is one of the largest operating I/UCRCs in the NSF program and the only one focused on healthcare transformation research.
8 UNIVERSITIES
4 INDUSTRY MEMBERS
12 COLLABORATIVE RESEARCH PROJECTS

CHOT CO-DIRECTORS
Thomas Ferris
Bita Kash

PHASE II OF I/UCRC
CHOT is awarded 5-year funding with 3 of the 4 current sites:
Texas A&M University
Georgia Institute of Technology
Pennsylvania State University

CHOT DIRECTOR
Bita Kash
15 INDUSTRY MEMBERS
22 RESEARCH PROJECTS

PHASE III I/UCRC GRANT
CHOT applies and awaits grant funding for all university sites
CHOT DIRECTOR
Thomas Ferris

1008
FIRST FALL IAB PROGRESS REPORT MEETING—71 ATTENDEES
First time LIFE forms were implemented for IAB feedback.

THIRD UNIVERSITY SITE
Northeastern University
Site director:
James Benneyan
12 INDUSTRY MEMBERS
10 INDUSTRY PROJECTS

2011

2014

2017

2019–2024

2018

10 years of CHOT
NSF Center for Health Organization Transformation

MISSION
The mission of the NSF Center for Health Organization Transformation (CHOT) is to advance the knowledge and practice of transformational strategies in evidence-based management and clinical practice. CHOT conducts cooperative research among universities, health systems and other health-related industries. The Center relies on multi-disciplinary approaches to advance and link system design and organizational technologies in innovation research. The three main areas in which CHOT conducts research are:
- Developing research-informed strategy
- Validating innovations in healthcare delivery
- Implementing evidence-based innovation across settings

CURRENT CHOT INDUSTRY MEMBERS—THE INDUSTRY ADVISORY BOARD (IAB)

Alacare Home Health & Hospice
American Society of Anesthesiologists
AT&T
Aviza, Inc.
Care Coordination Institute
Central Texas Veterans Health Care System
Children’s Healthcare of Atlanta Sibly Heart Center
Children’s National Health System
Grady
GTech Procure
Highmark
LakeShore Foundation
Last Best Chance, LLC
Main Line Health
Morehouse School of Medicine
Opelousas General Health System
Palm Health Foundation
Passport Health Plan
Penn State Health Milton S. Hershey Medical Center
Philips Healthcare
Quantum Innovation
Restore Medical Solution
Sanofi
Seattle Children’s Hospital Lab Medicine
Seattle Children’s Hospital Primary Care
Siemens
Susan G Komen
Texas A&M College of Medicine
University of Alabama at Birmingham Health System
University of Louisville Hospital
York Risk Group

PAST CHOT INDUSTRY MEMBERS—THE INDUSTRY ADVISORY BOARD (IAB)

Beth Israel Deaconess Medical Center
East Texas Medical Center
Georgia Trauma Care Network Commission
HUB
HKS, Inc.
Lockheed Martin
Lone Star Circle of Care
Maine Medical Center
MD Anderson Cancer Center
Meadows Regional Medical Center
Northside Anesthesiology Consultants, LLC
Our Lady of the Lake Regional Medical Center
Partners Healthcare
Scott & White
St. Luke’s Episcopal Health System
Studer Group, LLC
Texas A&M Coastal Bend Health Education Center
Texas Health Resources
US Department of Veterans Affairs: Center for Applied Systems Engineering
Ustawi Biomedical Research Innovation and Industrial Centers of Africa (UBRICA)
Verizon
HealthSouth
MultiCare Health System
Pennsylvania Office of Rural Health
Texas Children’s Hospital

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Additional information on CHOT research projects from previous years are available to our members at chotnsf.org.
This material is based upon work supported by the National Science Foundation under Grant No. 1361509. Any opinions, findings and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.
As a National Science Foundation industry-university cooperative research center (I/UCRC), CHOT follows a model of an industry-academic partnership that benefits industry-focused research across more than 50 disciplines. Of the 70 I/UCRCs within the United States, CHOT is the only one focused on innovations in healthcare delivery. CHOT researchers work alongside the Industry Advisory Board (IAB) to conduct research that supports the implementation of evidence-based transformational strategies within the healthcare sector. CHOT creates a safe, mutually beneficial, cooperative environment where leading healthcare industry members can come together to collaborate and innovate.

Our research model relies on the knowledge and experience of healthcare leaders to guide academic research. This cooperative model ensures that the research is both meaningful and applicable to the healthcare industry and provides immediate decision support.

INDUSTRY ADVISORY BOARD (IAB)

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<th>CHOT UNIVERSITY SITES:</th>
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INDUSTRY MEMBERSHIP

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<td>INNOVATIONS IN HEALTHCARE DELIVERY</td>
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CHOT’s research model relies on the knowledge and experience of healthcare leaders to guide academic research to ensure that it is meaningful and applicable to the healthcare industry and provides immediate decision support.

INDUSTRY TESTIMONIALS

"From a research standpoint with CHOT we see opportunities to expand beyond the focus of direct to consumer telemedicine projects to research other use cases and expansion of telmedicne to support population health and other initiatives, as well."

Robert Bernstein, MD
Vice President of Clinical Affairs
Avizia

"CHOT is a valuable resource to the American Society of Anesthesiologists (ASA) and the physician committee responsible for developing and disseminating a base of knowledge around the perioperative surgical home (PSH). There is a real and effective synergy between the CHOT researchers and ASA’s in-house research staff. The CHOT research and reports were the perfect combination of academic rigor and objective qualitative information that was instantly relevant and useful to enhance the productivity of ASA’s concept development phase."

Thomas Miller, PhD, MBA
Director of Health Policy Research
American Society of Anesthesiologists

"Our membership in CHOT gives us access to transformative leadership with academic and business partners around the nation. We share the resources of all of the campuses involved with CHOT, so we can benefit from what's being learned in all of those programs. Plus as a voting member, Main Line Health can prioritize the research projects CHOT undertakes. Our membership in CHOT shows our continued commitment to leadership in research and innovation, and most especially to expanding on our expertise in population health research."

Phil Robinson, FACHE
President, Lankenau Medical Center
Maine Line Health
**Enhanced Transitions of Care**

**Discharge phone call (DPC):** initiative aimed at improving transitions of care and reducing readmissions

**THE DPC ASKS DISCHARGE PATIENTS QUESTIONS COVERING FIVE MAJOR AREAS:**

1. Are you feeling better today than when you left the hospital?
2. Questions about discharge instructions?
3. Have you been able to fill your prescriptions?
4. Did our staff review your follow-up appointments or the process for scheduling your follow-up?
5. Any other questions?

**Centralized DPC nurses called patients within 96 HRS of discharge.**

**Centralized DPCs are significantly associated with increases in the % of patients reached by the DPC.**

**Patients not reached were 1.32 X MORE LIKELY TO BE READMITTED than patients reached by centralized DPCs.**

**Centralization of the DPCs to a central call center was more effective in reaching patients than DPCs being performed independently by unit nurses within individual discharge units.**

**CHOT INSIGHTS**

**Emergency Department Patient Experience and Wait Time**

**Emergency department (ED) waiting time:** strongly related to patient satisfaction

A paper-based questionnaire was designed with six sequential sections:

1. History of ED visits
2. Perceptions about the ED visits
3. Perceptions about ED waiting time
4. Privacy and personal issues regarding ED visits
5. Demographic information

**WAYS TO IMPROVE**

- Hospitals should consider adopting additional quality measures to benchmark timely and effective ED care, which not only documents the time for transitioning patients to inpatient care but also within the ED
- Improvement plans should be designed to improve satisfaction for lower severity ED patients during the waiting process
- Hospitals should not only focus on reducing actual ED waiting time, but provide interventions to improve perceptions about ED waiting time during the tedious waiting process


**Describing words:** transitions of care, discharge phone call, hospital readmissions, quality of care


**Describing words:** emergency department, patient experience, waiting time perception
Exploring Future Models of Primary Care

Texas healthcare delivery system currently serves over 26M people. Texas is currently in a state of serious physician shortage.

LEADING CAUSES OF MORBIDITY AND MORTALITY IN TEXAS

- Heart Disease & Stroke
- Diabetes
- Respiratory Disease
- Cancer

Healthcare leaders, academic programs, and practitioners are encouraged to consider models such as the following:

- Complex adaptive systems for team-based care: Shows an increase in the proportion of patients who met goals for controlling their risk factors of diabetes
- Combined nurse-led care management with group visit structure: Can be successfully implemented in rural primary care practice and produce improved clinical outcomes
- Pharmacist hypertension care management program: Shows a significant improvement in blood pressure
- PRISM model to improve asthma care: Increases healthcare providers’ knowledge and confidence in their ability to provide quality asthma care
- Virtual tumor boards: Provide greater access to cancer care and allow the multidisciplinary approach to be continued throughout hospitals and health systems regardless of location

Development of Sustainable Community Paramedicine Programmes: A Case Study in Pennsylvania

Community paramedicine is more efficient than typical medical providers for acute minor conditions.

COMMUNITY PARAMEDICINE (CP) MODEL

1. CP model gives paramedics an expanded healthcare role which increases access to basic services and care
2. CP model helps decrease ED use and 911 calls
3. Increasing understanding of CP programs helps give support to programs

Expanded roles:
- Performing medical procedures
- Physical/mental health assessments
- Follow-up post-discharge
- Conducting disease prevention & education

There isn’t a one-size-fits-all solution for what a CD program should look like since each local population has different needs and wants so it’s up to every local CD program to determine their own specific road map.


Inpatient Bed Management to Improve Care Delivery

This is a three-fold problem due to:
1. How many groups of services to create
2. How many beds to allocate to each group
3. How to partition services among the groups

Solution is to create a computational framework with two stages:
1. Cluster specialties to establish a limited number of group-service candidates
2. Optimize bed allocation and finalizing partitioning services into groups

Potential solution
The utilization of machine learning and predictive analytics to predict patient characteristics and return patterns. This will uncover patterns to appropriately align resources with demands and to better forecast needs.

System Analytics
will allow a hospital ED to decrease wait times by understanding all the obstacles and complexities of patient flow to perform optimally.

Quantitative benefits:
- Improved efficiency of emergency care
- Annual financial savings and increases revenues
- Encouragement of external sponsorship

Qualitative benefits:
- Health cost reductions
- Continuous improvement and adaptive advances
- Improved quality of care in other facilities

These in-house complexities are combined with external complexities, such that hospitals cannot add or remove a hospital bed without state review or approval.

The solution is flexible, as it can be used by various hospital types, and can help the hospital make strategic decisions.


Organizational Capacity for Change in Healthcare: Development and Validation of a Scale

*Healthcare* is a dynamic industry, so change is vital to both success and survival.

This study created a survey to measure the capability of healthcare organizations to undertake transformative change initiatives.

**The Survey is built upon 2 Concepts:**
1. Organizational readiness for change (ORC)
2. Absorptive capacity (ACAP)

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If utilized properly, it can help healthcare leaders evaluate the capacity of their current employees, department, and teams to see if they are truly ready for change. Then, the tool can help these leaders plan and implement organizational change effectively and tailored to the unique characteristics of the organization.


Mitigating Online Product Rating Biases through the Discovery of Optimistic, Pessimistic & Realistic Reviewers

Customer reviews are not always accurate, as they are plagued with biases that result in various degrees of **Pessimism & Optimism**

To create more realistic reviews, the study proposes to adjust product ratings in order to provide customers with more accurate, realistic customer feedback based on customers' past rating histories and tendencies.

**Customized Rating Analysis Model**

**Overview of the Proposed Rating Model**

This model will help customers to make better future purchasing decisions and will help organizations better predict future market sales.

Citation: Lim, S., & Tucker, C.S. (2017). Mitigating online product rating biases through the discovery of optimistic, pessimistic, and realistic reviewers. *Journal of Mechanical Design.*

Describing words: Data-driven design, user generated data, electronic word-of-mouth, online review, customer rating.
Comprehensive Analysis on Impact of Social Determinants to Improve Care Across Populations

VALUE PROPOSITION
- Develop predictive models for readmissions incorporating social and medical factors to inform and guide care plans.
- Create access to developed databases and analysis for selected patient groups.

DESCRIPTION
Social and environmental determinants, such as economic stability, housing and physical environment, food access, community support, availability of health care systems, and the satisfaction of patients and care providers impacts health outcomes. Initiatives are underway to improve the understanding of how these social factors can influence the organization and delivery of care to patient communities, targeting the broad population as well as focused efforts on those with certain medical conditions. However, there is limited research focused on the relationship between social determinants and healthcare for specific sub-populations, such as military veterans, pediatric populations, and those with histories of readmission or repeated ED visits. Additionally, there is value in completely understanding how these social factors interact with health conditions in regard to patient satisfaction and HCAHPS scores. This collaborative project seeks to address these aims and broaden the knowledge base concerning the effects of social determinants on mental health, physical health, and the utilization of available healthcare.

HOW THIS IS DIFFERENT THAN RELATED RESEARCH
This proposed research focuses on identifying the social factors that contribute to the mental and physical health of individuals from target populations (veterans, children, recurrent ED visitors). The understanding of these factors can inform ways of improving the effectiveness of care and the patient experience. This research will support efforts to extend patient care beyond clinical parameters, to understand the effects of social demographics on patient experience through HCAHPS, and to orient clinical practice for improved patient experience and reduction in the cost of care.

Participating in a Community Health Improvement Network

VALUE PROPOSITION
- Advance the knowledge of best practices for consumer-directed exchange (CDEx).
- Advance the knowledge of best practices for encrypted search with high security.
- Develop models for profitable CDEx-driven sharing in systems, communities, and states.

DESCRIPTION
The project participants will participate in one or more innovative "consumer-directed" community health information sharing networks. These sharing networks are designed to improve ability for people and organizations to more easily share health and well-being data to improve care coordination and support research across the community. The project will explore the implementation and use of several innovations: 1) a multi-stakeholder, community-based governance and oversight structure; 2) consumer-directed health information exchange leveraging HIPAA individual right of access mechanisms; 3) a technology platform supporting safe, secure, encrypted data sharing among people, providers, plans, apps, AI firms, and researchers; 4) a sustainable business model tied to reducing costs and improve quality and outcomes; and 5) potential to generate millions in new private-sector led investments from sales of equity and a blockchain based digital currency.

HOW THIS IS DIFFERENT THAN RELATED RESEARCH
The CHIN project will research a new paradigm of health information sharing that places the person (patient/consumer) at the center of information sharing. To accomplish this, the CHIN project will use next generation security technologies, including blockchain, to protect and enable personal health information sharing. The CHIN will engage public and private-sector organizations to advance this emerging form of secure "consumer-directed exchange." The project will focus on use-cases with potentially high impact and ROI, emphasizing populations with type-II diabetes and opioid addiction, but also looking at other chronically ill or under-served populations with care coordination challenges.
The Effectiveness of Substance Abuse Treatment Services (SATS) in Combating Opioid Crisis

**VALUE PROPOSITION**
- Evaluate the effectiveness of SATS in curbing opioid overdose-related deaths from a population-level perspective.
- Explore and recommend effective programs such as individual and group counseling to recover opioid abusers.
- Explore the demand aspect when looking to combat opioid crisis.

**DESCRIPTION**
Each day, more than 115 Americans die due to overdosing on opioids. Addiction to opioids (including heroin and fentanyl) is a serious national crisis devastating to public health. To combat the opioid crisis, the Substance Abuse Treatment Services (SATS) facilities across the country provide opioid addicts professional counseling and treatments. The objective of this project is to evaluate the effectiveness of the different opioid addiction treatment programs provided by these SATS facilities. The programs are evaluated by using sophisticated econometric models to analyze the national survey data on SATS facilities, the epidemic data on opioid abusers, and other related data.

**HOW THIS IS DIFFERENT THAN RELATED RESEARCH**
While the opioid crisis has attracted much research, most of the research focuses on the supply side of the problem and investigates ways to control the supply and prescription of opioid such that only for legitimate reasons, patients can have access to a reasonable amount of opioids. Much less research investigates the demand side of the problem. As we know, opioid abusers, who typically have developed addictions, often seek illegal access to opioid or other alternatives. This study takes this angle and looks from the demand side of the opioid problem by investigating the effectiveness of the different treatments and services used to recover opioid addicts. While some medical papers have examined the effectiveness of SATS from the individual patient perspective, this study evaluates SATS from a population perspective; from which we expect to provide policy guidance on managing such programs.

Care Coordination & Patient Experience Across the Continuum of Care: A Value-Based Reimbursement Perspective

**VALUE PROPOSITION**
- Develop tools to coordinate care and assess patient experience across the continuum of care.
- Summarize the intricacies of new value-based reimbursement models and encourage inter-professional activities at the professional school level to acclimatize practitioners before entering the workplace.

**DESCRIPTION**
Value-based reimbursement (VBR) in health care has resulted in an increased focus on care coordination and patient experience (CAHPS) across the continuum of care, including hospitals, home health, and ambulatory care. This project has three aims: 1) identify and pilot test a survey instrument that can be used to assess patient experience across the continuum of care from acute care to post-acute care; 2) incorporate VBR concepts into medical curricula and adapt practices to support patient experience in a VBR-based system; and 3) develop a HIPAA compliant messaging platform to ensure timely delivery of all messages to a care team with a critical patient information attached with each message.

**HOW THIS IS DIFFERENT THAN RELATED RESEARCH**
This research contributes to the areas of measurement, training and development, and technology implementation with the goal of improving care coordination and patient experience across the continuum of care. First, there has been a focus on assessing patient experience on separate components of the continuum of care, or a silo approach; however, there is less research on assessing the patient experience across the continuum of care as the patient transitions from one setting to another. Second, there is a need for medical curricula to incorporate principles associated with value-based reimbursement. Finally, while several new mobile healthcare messaging applications are available, such as HIPPA compliant WhatsApp, they ultimately create more silos.
Developing a Risk Prediction Model for Hospital Acquired Clostridium Difficile Infection (CDI)

**VALUE PROPOSITION**
- Develop a risk prediction model of CDI to screen patients at risk for the infection at the time of admission.
- Identify predictors of CDI to allow the development of potential interventions to reduce rate of CDI by administering proactive treatment to at-risk patients to potentially reduce length of stay.

**DESCRIPTION**
Hospital Acquired Infections (HAIs), infections acquired after admission to the hospital, cost the healthcare sector about $25 to $31 billion each year. In 2002, the Centers for Disease Control and Prevention estimated the rate for HAIs to be about 1.7 million, with 99,000 related to deaths during hospitalization. Hence, HAIs affect quality and cost of healthcare. In 2008, Medicare initiated a plan to reduce payments to hospitals for complications that occur during the hospital stay, including HAIs. One such infection is the Clostridium difficile infection (CDI), which is the most common cause of infectious diarrhea occurring in the hospital. Treatment costs per patient is approximately $8,911 to $30,049 in the U.S. In Phase I, we identified predictors of hospital acquired CDI. In Phase II, we will conduct a retrospective study using UAB i2b2 dataset to develop a risk prediction model for CDI. The main goal of this study is to develop a CDI risk prediction model to categorize patients into high, medium, and low risk categories, which will allow for more targeted strategies.

**HOW THIS IS DIFFERENT THAN RELATED RESEARCH**
While there are studies exploring the predictors of CDI, there are no studies that develop a CDI risk prediction model that allows categorizing patients into high, medium, and low risk categories. Creating such risk categories would allow the development of more targeted testing strategies for CDI infection. Given that CDI testing tends to be expensive and not reimbursed by the payers, it is crucial for hospitals to develop more targeted CDI testing strategies.

Leveraging Technology to Enhance Communication in Healthcare

**VALUE PROPOSITION**
- Improve communication, compliance, and quality of care through automated machine translations to accommodate individuals who speak other languages.
- Design chatbox and virtual messaging to enhance family engagement, knowledge dissemination, and awareness of hospital acquired infection.

**DESCRIPTION**
With continuous advancements in technology, care providers have access to more tools than ever before. These advancements help to combat breakdowns in communication with referring physicians and to ultimately play a greater role in improved patient care. Often overwhelmed with heavy workloads, care communication between patients and providers may suffer. For example, radiologists may be hesitant to assume additional responsibilities related to conveying test results and ensuring proper follow-up with patients. Certain symptoms discovered during surgical procedures by surgeons may be conveyed ineffectively to intensivists and bedside teams. These activities can play an important role in not only carefully interpreting images or making recommendations, but also acting as a safe, patient-centered back-up system to ensure actionable results are not overlooked. In a similar manner, non-English speaking patients may require enhanced care coordination plans to ensure that they understand the discharged and home care process.

**HOW THIS IS DIFFERENT THAN RELATED RESEARCH**
While there are studies exploring the predictors of CDI, there are no studies that develop a CDI risk prediction model that allows categorizing patients into high, medium, and low risk categories. Creating such risk categories would allow the development of more targeted testing strategies for CDI infection. Given that CDI testing tends to be expensive and not reimbursed by the payers, it is crucial for hospitals to develop more targeted CDI testing strategies.
**Care Coordination Activities for Individuals with Spinal Cord Injury (SCI)**

**VALUE PROPOSITION**
- Evaluate evidence of the effectiveness of a care coordination program on improving the quality of life of SCI patients.
- Develop care coordination model for individuals newly discharged from an inpatient setting with SCI.

**DESCRIPTION**
This is Phase II of a project designed to develop and pilot-test a care coordination program for people newly diagnosed with spinal cord injury (SCI). Phase I activities, which are currently underway, are focused on developing the care coordination program. This phase includes (1) a review of relevant literature and (2) in-depth interviews with patients with SCI, caregivers, physicians, other health care workers who specialize in SCI, and staff at the Lakeshore Foundation. Based on findings from these two activities, a pilot intervention will be developed. Phase II will implement the care coordination program developed in Phase I and assess the extent to which it improves the quality of life of participants.

**HOW THIS IS DIFFERENT THAN RELATED RESEARCH**
Several studies have documented the effectiveness of care coordination/transitions of care activities. Most of these studies focus on the general population and do not address the specific and unique needs of individuals newly diagnosed with SCI. The proposed project aims to address the needs of individuals with significant mobility limitations. In addition, the project reveals how a local disability-focused community organization can partner with an academic medical center to improve the quality of life of individuals with SCI.
Embedding Routine Informal, Family Caregiver Assessment of Delirium Superimposed on Dementia into Acute Care

VALUE PROPOSITION
- Understand how to allow informal family caregivers at the bedside to routinely communicate observed signs and symptoms of common hospital adverse events to medical staff using app-based technology and standardized screening instruments.
- Evaluate the implementation of family caregivers observed symptoms utilizing the FAM-CAM app to potentially improve recognition and management of delirium in the acute care setting.

DESCRIPTION
The purpose of this pilot study is to assess initial accuracy and feasibility of communication of observed symptoms of delirium in older adults with complex multiple chronic conditions dementia by family caregivers utilizing app-based delivery of the Family Confusion Assessment Method (FAM-CAM) in the acute care setting.

HOW THIS IS DIFFERENT THAN RELATED RESEARCH
Current standards in diagnosing delirium rely on diagnostic criteria of the Diagnostic and Statistical Manual of Mental Disorders, 5th Edition (DSM-5) and the International Statistical Classification of Disease and Related Health Problems, 10th Revision (ICD-10). However, there are no specific diagnostic criteria for delirium in persons with preexisting dementia. Recommended assessment tools for delirium, such as the Confusion Assessment Method (CAM), take into account changes from normal, but this is often unknown to formal healthcare providers. For older adults with complex multiple chronic conditions and cognitive impairment, the individual who may be best able to assess baseline cognitive function is the family caregiver. A modification of CAM, FAM-CAM, allows family caregivers to report their observations of symptoms of delirium in a standardized method. The FAM-CAM shows potential to improve recognition, and therefore, management of delirium in the acute care setting.

Telemedicine in Primary Care & in Management of Chronic Conditions: Exploring Patient & Provider Perspectives

VALUE PROPOSITION
- Understand the adoption and diffusion of telemedicine in primary care to inform decision-making in service design, implementation, operations, and provider engagement.
- An assessment tool to identify individual primary care organizational readiness for telemedicine innovation to promote organizational success in delivering this mode of service.

DESCRIPTION
Timely access to quality healthcare service is challenging—as outlined in the 2015 IOM report—and misalignment of resources and demands result in long delays for care. Telehealth can offer alternative and timely care to rural area patients who lack sufficient healthcare options. Telehealth can also help to improve health conditions and to promote active patient engagement, which is particularly important for chronic disease management. This project identifies drivers and barriers of patient engagement by population groups and chronic conditions. It will also provide recommendations for implementing appropriate telehealth/telemedicine interventions through multiple care settings given governmental policies, reimbursement payments, and delivery of care.

HOW THIS IS DIFFERENT THAN RELATED RESEARCH
The adoption of telemedicine and the level of patient engagement and services provided across healthcare facilities remain uneven and far from optimal. Little evidence, particularly in the form of understanding from the viewpoint and situation of providers, is available to guide stakeholder organizations as they consider introducing telemedicine into primary care practice. This study examines issues including point-of-access, administrative logistics, timely primary care, monitoring chronic disease and mental health, and providing equal and affordable care to the poor and rural areas. The projects also investigates and will design a personalized remote patient monitoring system to connect patients and providers. By exploring successful application in multiple settings, such as the rural and primary care setting, this project will define the terms telehealth and telemedicine.
**Ask Me 3®: A Home Health Intervention to Address Health Literacy Barriers, Increase Patient Engagement, and Improve Patient Experience and Outcomes**

**VALUE PROPOSITION**
- Provide the foundation for future interventions of health system strategies to address barriers related to health literacy, increase patient engagement, and improve patient outcomes.
- Expand the current knowledge on the effect of health literacy on health outcomes.

**DESCRIPTION**
Value-based reimbursement in health care has resulted in an increased focus on patient engagement as a mechanism to improve post-acute care outcomes, particularly in reducing readmissions. However, health system strategies aimed at increasing patient engagement should account for health literacy and generational differences. Strategies that may work with a high literacy population may not be as effective among a population with low literacy.

**HOW THIS IS DIFFERENT THAN RELATED RESEARCH**
There is limited research on the effectiveness of health literacy interventions in improving patient engagement and health outcomes, particularly in the home health context. This is a two-phase project. During the current first phase, a literature review is conducted to identify best practices/strategies in addressing health literacy barriers in a home health environment with the ultimate goals of improving patient engagement and reducing hospital readmissions. The second phase will consist of a pilot intervention. Ask Me 3® is an educational program that encourages patients and families to ask three specific questions of their providers to better understand their health conditions and what they need to do to stay healthy: (1) what is my main problem?; (2) what do I need to do?; and (3) why is it important for me to do this?
SELECTED PUBLICATIONS 2017


