Exploring Factors Associated with Nurses' Adoption of an Evidence-Based Practice to Reduce Duration of Catheterization

Brian Conner*, PhD, RN, CNE, Assistant Professor, College of Nursing, MUSC

Hospitalized adult patients are at increased risk for adverse outcomes, particularly when undergoing invasive procedures such as indwelling urinary catheterization. Nurses are essential in providing high quality, cost-effective, and safe health care. This mixed methods pilot study identified factors associated with nurses' adoption of an evidence-based practice to reduce the duration of catheterization and potential for catheter-associated urinary tract infections in hospitalized adults. Objectives: 1. Comprehend the concepts and principles associated with an evidence-based practice to reduce duration of catheterization in hospitalized patients. 2. Describe the basic factors associated with nurses' adoption of an evidence-based practice.

Implementation Science of Sexual Health in Schools

Sarah Kershner*, MPH, CHES, Project Coordinator & Doug Taylor, MPH Chief Program Officer, SC Campaign to Prevent Teen Pregnancy

The sexual risk behavior of SC youth, existing services, unmet needs, state law around comprehensive health, and support from partners all influenced the decision to implement the evidence-based program. It's Your Game, Keep It Real (IYG), in a select number of South Carolina middle schools as part of a federally funded research study. Over the past two years, the SC Campaign developed a process for monitoring implementation in schools through fidelity logs, observations and assessing perceptions of teacher and administrative staff. From these data, SC Campaign staff has the ability to provide real-time technical assistance (TA) to ensure fidelity to the curriculum is maintained. This effective feedback loop yielded a 97.6% fidelity rate of all IYG activities in the first year of implementation. The goal of this process is to ensure implementation and thus increase the likelihood of sustaining the program. Objective: 1. Understand the process to identify the appropriate evidence-based program for a target audience. 2. Identify at least 3 processes used to monitor implementation of an evidence-based program in schools.

Challenges to Measuring Provider Fidelity in a Statewide Dissemination/Implementation Project

Rochelle F. Hanson*, PhD, Professor, Benjamin E. Saunders, PhD, Professor and Associate Director, Michael de Arellano, PhD, Associate Professor, Angela Moreland, PhD, National Crime Victims Research and Treatment Center, Department of Psychiatry and Behavioral Sciences, MUSC

This presentation describes Project BEST (Bringing Evidence-Supported Treatments to SC children and families; funded by Duke Endowment), a statewide initiative to support the dissemination/implementation of Trauma-focused Cognitive Behavioral Therapy (TF-CBT). Project BEST utilizes the Community-Based Learning Collaborative (CBLC) model to build community capacity to deliver and sustain trauma-informed services to abused children and their families. We have completed three CBLCs, with two nearly finished, involving 477 clinicians, brokers, and senior leaders from 105 different agencies serving 38 of South Carolina's 46 counties. An ongoing challenge is to determine the most feasible, cost effective ways to measure therapist fidelity to the TF-CBT
treatment model. We will provide an overview of Project BEST, followed by a discussion on measurement of therapist fidelity to TF-CBT and preliminary findings on its relationship to child treatment outcomes. The presentation will conclude with a discussion of challenges encountered in this statewide initiative, lessons learned, and future plans. Objectives: 1. Learn strategies to increase implementation and adoption of trauma-focused EBTs in community-based child welfare settings. 2. Discuss measurement of therapist fidelity in large scale implementation projects.

Adoption of HIV Counseling and Testing Following Completion of Randomized Clinical Trial
Louise Haynes*, MSW, Assistant Professor, Department of Psychiatry and Behavioral Sciences, MUSC & Leslie Wilson, MA, Vice President, Intervention and Treatment

Objective: 1. To present an example of successful implementation of HIV testing in substance abuse treatment. 2. To discuss ways in which participation in research provided support necessary for implementation of testing program. Issue: Many substance abuse treatment programs do not offer on-site HIV testing, and strategies for encouraging and supporting HIV testing in community substance abuse programs are needed. The National Institute on Drug Abuse Clinical Trials Network sponsored a randomized clinical trial to evaluate different strategies to increase the acceptance of HIV testing and reduce HIV risk behaviors among patients in community substance abuse treatment programs. Participation in the clinical trial provided opportunities for staff of community substance abuse treatment programs to 'try out' HIV risk reduction counseling and testing. One participating agency (LRADAC) adapted the research procedures and established a viable on-site counseling and testing program. Setting: The Lexington/Richland Alcohol and Drug Abuse Council (LRADAC) is a private not-for-profit community substance abuse program in Columbia, SC. The agency provides a wide range of substance abuse services. However, prior to their participation in the clinical trial, LRADAC did not offer on-site HIV testing to clients. Project: Following completion of the trial, LRADAC adopted (for clinical practice) the counseling and testing procedures used in the trial. The testing and counseling were piloted in the detoxification unit followed by implementation in the outpatient clinics. During clinical implementation, research procedures were modified for use in the real world clinic setting, revising the procedures of the randomized controlled trial (which focused on control and fidelity) into clinical practice, allowing more adaptability and flexibility. After the first year of experience with testing and counseling, LRADAC staff organized an interagency training program to disseminate their knowledge and experience to other substance abuse treatment agencies where testing programs were not in place.

Enhancing Research Data Collection Using a Novel Mobile Platform and Connectivity
Christopher Metts*, MD, Consultant for Clinical Neuroscience Division, MUSC

Handheld devices have been used previously to collect data in behavioral studies. The objective of this talk is (1) to describe a new enhanced mobile platform used in a research setting to collect live data from participants. The system generates cues that prompt participants to interact with the device. Data is pushed securely in real-time into a REDCap database on an institutional server using the system's application programming interface (API). (2) This platform provides new avenues of research data by leveraging modern mobile devices capabilities, such as accelerometers and higher bandwidth. Behavioral cues can be modified in real-time and feedback can be provided instantaneously. We would like to use this venue to explore collaborative projects with research investigators who are in need of a similar technological solution taking advantage of both REDCap and a mobile platform interface. For more questions please contact Dr. Obeid at 2-0272.
Implementation of Multi-level, Evidence-based Approaches to Increase Colorectal Cancer Screening:
Adapting Interventions for Uninsured Individuals in Primary Care Settings
Cathy Melvin, PhD, MPH, Associate Professor, Department of Public Health Sciences and Hollings Cancer Center, MUSC

Objective: 1. To illustrate how an academic-community partnership adapted and implemented multi-level, EBA to increase colorectal cancer screening among uninsured individuals in primary care settings 2. To explore challenges in assessing impact within and across levels  
Summary: We created an academic/community partnership to implement EBA for increasing colorectal cancer screening rates using principles of community-based participatory research and EBA from the Community Guide to Preventive Services and the US Preventive Services Task Force. Our multi-level intervention design integrated EBA with local professional expertise and preferences expressed by members of our target community and practice settings. We will describe EBA adaptations to address four types of cancer care (screening, detection, diagnosis and treatment), transitions necessary to go between types of care, multi-level contextual influences (e.g., local community, practice setting, provider team and individual patient levels), and community concerns about screening and follow-up regardless of an individual's ability to pay. Our results will illustrate the benefit of engaging community members in implementation study design and the challenges we faced in assessing impact within a multi-level design.

Provider Communication Intervention at a Federally Qualified Health Center-based Farmers' Market:
Implications for Implementation Science
Daniela B. Friedman*, MSC, PhD, Associate Professor, Department of Health Promotion, Education, and Behavior, Core Faculty, Statewide Cancer Prevention and Control Program & Faculty Affiliate, Prevention Research Center; Women’s and Gender Studies, USC

Farmers' markets (FMs) have potential to improve the health of underserved communities. This presentation describes the influence of a communication intervention at a federally qualified health center (FQHC)-based FM. Provider communication strategies included: providing patients with 'prescriptions' and vouchers for market purchases; educating patients about diet; modeling healthy purchases. Interview and survey data showed patients enjoyed interacting with providers at the FM and providers distributed prescriptions/vouchers to patients and shopped regularly at the FM. Incorporating provider modeling into interventions is an innovative approach to improving patients' dietary behaviors and FM use. Objectives: 1. Describe a communication intervention implemented at an FQHC-based FM. 2. Identify benefits of provider role modeling on patients' dietary behaviors and community interventions.

Evidence-Based Order Sets: The Link between Best Practice and Clinical Care
Elizabeth Crabtree, MPH, PhD Candidate, Director, Evidence-Based Practice & Assistant Professor & Emily Brennan, MLIS, Assistant Professor/Research Informationist, Department of Library and Informatics, MUSC

Background: The need to apply principles of evidence-based medicine (EBM) in everyday practice can be challenging in the workflow of clinicians providing care to patients in a busy setting. Equally challenging to practitioners in a burgeoning information age, is the need to quickly and efficiently locate information, and appraise and apply it to patients in a rigorous, valid, and reliable manner. EB order sets embedded within the electronic medical record (EMR) facilitate both of these goals. In preparation for inpatient computerized physician order entry in July 2014, the MUSC (MUSC) is forming a partnership between the Library and Quality Management to support an evidence review of MUSC's current order sets. Medical librarians will search for, appraise, and summarize existing literature for clinicians, working with them to ensure that order sets reflect best practice, and current evidence. In addition, quality measures for each order set will be identified to monitor the clinical effectiveness of EB order sets. Objectives: This presentation will highlight both the need for EB order sets within the EMR, and MUSC's process for performing an evidence review.
A central tenet of implementation science is that the quality with which programs are implemented is a critical component to program success. Quality implementation of evidence-based practices in the 'real-world' requires ongoing and systematic planning, monitoring, and evaluation. To support organizations and communities in implementing programs with quality, we developed the Quality Implementation Tool (QIT). The QIT is a translation of the implementation science literature, and focuses on the factors most important for quality implementation. The objectives of the current presentation are to (1) provide an overview of the Quality Implementation Tool, including a discussion on how the tool was derived from the implementation science literature, and (2) provide an illustration of how the QIT can be used to bring evidenced-based practices and programs to scale. An applied example of using the QIT to bring an educational technology innovation to scale in a large, local school district will be provided. The flexibility of the QIT across content areas and organizations will be highlighted.

Improving Critical Thinking at the Bedside

Catherine Garner, DrPH, MSN, RN, Executive Administrator, Nursing Practice and Academics, Greenville Hospital System

1. Assess the effectiveness of focused CNE education on improving quality and safety initiatives  
2. Identify key elements to re-focusing safety efforts to improve critical thinking at the bedside  
Patient safety and effective care are still proving to be challenges in the acute care environment. Despite many best practice initiatives to reduce safety events and ensure quality care, challenges remain. Researchers from the Healthcare Performance Improvement Institute (2012) looked at data from 96 hospitals, based on nearly 2000 reported safety events and concluded that 55.7% of these were attributed to lapses in critical thinking. Greenville Health System (GHS) developed an eight week course for clinical nurse educators (CNEs). The course was based primarily on the work of Rubenfeld and Scheffer's (2010) 'Critical Thinking Tactics for Nurses: Achieving the IOM Competencies.' The course resulted in twelve revised or new quality initiatives focused on enhancing the critical thinking of the nurse at the bedside as the key intervention. All projects have specific program evaluation plans consistent with GHS quality indicators.

Improving the Peri-Operative Value of Care in Transplant Recipients

David Taber, PharmD, Assistant Professor, Department of Surgery, MUSC

Objectives: 1. List at least three methods to reduce hospital length of stay and readmissions in kidney transplant recipients.  
2. Describe the most effective mechanisms to improve both the processes and structure of health care delivery in surgical patients. 
Abstract: Due to external pressures associated with utilizing marginal donors and recipients and costs constraints from a predominately DRG based pay system, the fiscal viability of kidney transplantation has diminished greatly over the past decade. Over the past several years, the MUSC Transplant Center developed and implemented multidisciplinary interventions aimed at improving the value of healthcare delivered to kidney transplant patients. These interventions included improving both healthcare related processes (evidence based protocols, pathways, med reconciliation) and structure (new interdisciplinary care, medication delivery models, and clinic follow-up models). Results of these initiatives demonstrated a sustained 44% reduction in adverse drug reactions, a 50% reduction in 7, 14, and 30-day readmissions, and a 21% reduction in length of stay (LOS), ranking our center first in LOS index for all UHC affiliated transplant centers. This presentation will discuss the methods, interventions, and results from this sustained innovative and interdisciplinary healthcare delivery model as well as future proposals to scale up these interventions to other transplant types (liver and pancreas) and potentially other surgical disciplines.
Tobacco smoking cessation interventions in substance abuse community treatment programs. Rates of cigarette smoking in substance abusing populations are much higher than rates in the general population (49-98% versus 19%, respectively; Schroeder, 2009). Yet, evidence based tobacco smoking cessation (SC) interventions in community substance abuse treatment programs are underutilized. Improved rates of SC in alcohol and substance abusing population can have a substantial impact on public health and the enormous financial burden associated with tobacco related chronic diseases. Barriers to successful adoption of evidence based SC treatments were explored in three community treatment programs in South Carolina. All three programs participated in a large national multi-site study investigating the effectiveness of a 10-week comprehensive SC intervention consisting of 30 minute brief individual weekly counseling sessions, contingency management for achieving SC goals and optional medication. Following completion of the study, community programs were offered support and resources to continue the intervention as part of their clinical treatment program. Two of the three programs initially implemented either all or certain components of the intervention but only one program sustained adoption. Factors associated with successful adoption and barriers that interfere with adoption will be discussed.

Development of an Electronic Research Permissions Management System to Enhance Informed Consents and Capture Research Authorizations Data

Jihad Obeid, MD, Acting Director, Biomedical Informatics Center at Health Sciences South Carolina & SCTR, Associate Professor, Department of Psychiatry and Behavioral Sciences, MUSC

Informed consents are a critical and essential component of the clinical research process. Currently, most consents and research privacy authorizations are being captured on paper. In this presentation we will describe a novel method of capturing this information electronically. The objective is to allow easier tracking of research participants' intent for current and future research involvement, enhance consent comprehension and facilitate the research workflow. After multidisciplinary analysis in key hospital registration areas and research participant enrollment, an open source software product was designed to capture this data through a user-friendly touch screen interface. The data may then be fed into systems of record such as a clinical trials management system or a clinical data warehouse for use in cohort discovery or consent tracking. Despite ethical, legal and informatics challenges in clinical and research environments, we propose that this technology opens new avenues for significantly enhancing the consent process and positively impacting enrollment and possibly recruitment. The objectives of this talk are to (1) highlight this new technology and analysis work to date and (2) explore collaborative projects with research investigators who are interested in piloting a new consenting system in their clinical research workflow.

Effectiveness of Triage During a Chemical Incident

Joan Culley, PhD, MPH, MS, RN, CWOCN, Assistant Professor, College of Nursing, USC

Aim: This is the first outcomes-level study involving an actual mass casualty chemical incident to determine the association between data collected in four popular triage systems and the severity of signs/symptoms necessitating medical intervention. Methods: Data collected for approximately 900 victims of a chlorine leak were used to study the effectiveness of four triage tools for identifying the most severely impacted patients following a mass-casualty event. Results: The spearman correlation statistics indicated there were moderate negative correlations among the triage models with health outcome severity and the oxygen saturation measured on admission to the emergency department (significant at alpha=0.05.) There was poor agreement between the triage models as assessed with the Kappa statistic. The result did not show any agreement between any models and health outcome severity class. Conclusions: These commonly used triage tools were moderately correlated with measures of health outcome (Spearman r = -0.3 - -0.6), but were not in complete agreement with the health outcome severity. Additional research is needed to develop more effective triage tools for identifying the most severely impacted patients following a mass-casualty event.
Prevention of chronic disease through improved diet and physical activity could reduce the number of preventable deaths in the US caused by heart disease, cancer and diabetes. In this study, the researchers attempt to build on a body of knowledge, and removed the primary barrier to eating a healthier diet, which is the cost of fruits and vegetables, to see if dietary improvements in a community setting can lead to population level improvements in chronic disease risk. The primary objective of the talk is to discuss a community based collaborative effect to improve access to healthy food choices, physical activity, and nutrition education on health outcomes measures related to chronic disease in a rural South Carolina community. The second objective is to discuss potential opportunities for policy change.

Using a Public Health Perspective to Integrate Quality into Behavioral Health Care
Jonathan P. Scaccia*, MS, Jennifer Castellow, MA & Abraham Wandersman, PhD, USC
An integral part of improving public health is improving the quality of behavioral health. Service delivery in behavioral health often suffers from substantial variation in quality, related to the selection, implementation, and evaluation of interventions. Frameworks and guidelines are necessary to promote positive behavioral health outcomes, address behavioral health problems, and provide strategies for the integration of quality health services. This brief presentation will demonstrate how the Nine Aims for Quality for Public Health (Honore et al., 2011) can be used to improve service delivery in behavioral health within a continuum of care and systems levels (nation, state, community, etc.) framework. We will discuss improving outcomes among people with co-occurring mental health and substance-related disorders as an example to illustrate both the content and level of analysis needed to examine quality in behavioral health. Finally, we will discuss some strategies that can be used to develop, implement, and evaluate these quality aims in behavioral health service delivery.

Improving Patient Care through Nursing Engagement in Evidence-Based Practice
Andrea Coyle, MSN, MHA, CMSRN, MUSC; Elizabeth Crabtree, MPH, MUSC; Emily Brennan, MLIS, MUSC; Candace Moorer, MLIS, MUSC
Background: Nurses are the frontline of health care, and have a unique opportunity to improve patient care through evidence-based practice (EBP). Best practice only results when staff continually ask questions about treatment and care, and have the resources and skills necessary to search for and appraise research evidence, implement it in practice, and evaluate its effectiveness. The staff nurse is a critical link in bringing research-based changes into clinical practice. However, experience preparing practicing nurses for EBP is limited. The Center for Evidence-Based Practice and the Center for Professional Excellence at the MUSC (MUSC) have partnered to develop an 8-week project-based workshop to prepare nurses to engage in EBP. The workshop will provide nurses with a comprehensive overview of EBP, preparing them to frame clinical questions, perform literature searches, analyze and evaluate evidence, and translate that knowledge into something clinically meaningful. As a part of the course, nurses will select a specific hospital policy, and apply their knowledge to evaluating the evidence-base for it, and ensuring the policy reflects current evidence, and best practice. Objectives: This presentation will highlight the major components of the program, and the need for nursing engagement in EBP.

Program Evaluation of the South Carolina Health Information Exchange
Amy Brock Martin, DrPH, Kevin J. Bennett, PhD, Grishma Patel Bhavsar, MPH
Objectives: 1. Describe evaluation research conducted in South Carolina to integrate policy and program decisions. 2. Demonstrate methods used to understand implementation strategies of current policy requirements, such as health information exchanges. The Health Information Technology for Economic and Clinical Health (HITECH) Act of the American Recovery and Reinvestment Act of 2009 (ARRA) stressed the importance of the adoption and
meaningful use of health information technology. The Office of the National Coordinator for Health Information Technology (ONC) financially supported statewide health information exchanges (HIE) through cooperative agreements. As part of the cooperative agreement with the ONC, a program evaluation to 1) determine the approach and strategies used to expand HIE, 2) understand factors that supported and hindered implementation of these strategies, 3) assess how the strategies contributed to progress was conducted, and 4) analyze the HIE performance in priority areas. This analysis provided a portion of the findings from this evaluation for the state of South Carolina. A mixed methods approach is being used to evaluate the SCHIEX. Each of the qualitative and quantitative data collection methods is theoretically grounded in Diffusion of Innovation Theory, the Donabedian Structure-Process-Outcome Model, and the Triple Aim Model. The study population consists of key HIE stakeholders, which include representatives from the state's HIE administrative organization and Medicaid program, SC Medical Association, SC Hospital Association, SC Office of Rural Health, SC Primary Care Association, the Regional Extension Center and its subcontractors, healthcare providers, and priority Medicaid patients. Findings are currently not available, but are projected to be available by Summer 2013.

Librarians and iPads: bringing evidence-based medicine to the bedside
Emily Brennan*, MLIS and Candace Moorer*, MLIS. MUSC Library.

Objectives: 1. To describe librarians involvement in the EBM curriculum in the departments of internal medicine and pediatrics. 2. To demonstrate the use of iPads in EBM instruction and clinical rounding. Two academic librarians are involved in the evidence based medicine (EBM) curriculum for students and residents in the departments of internal medicine and pediatrics. During each rotation, medical students are required to complete an EBM project with the librarian. Librarians provide formal group instruction on EBM and mobile device apps, and round with interprofessional teams consisting of health professional students, residents, pharmacists and attending physicians. While rounding, librarians research clinical information on their iPads and provide evidence at the point-of-care.

Using the Institute for Healthcare Improvement's Breakthrough Series (IHI BTS) Model to Implement Evidence Based Practices
Pamela S. Gillam, MPA*, Director, Center for Health Services and Policy Research, USC

Obj 1- To orient participants to the IHI BTS Model Obj 2- To increase their understanding of how the model is used in the public health setting through real life examples. IHI's BTS Model is a quality improvement method that focuses on the adaptation and spread of existing knowledge to accomplish a common aim. The model provides a learning continuum in which at the beginning teams learn evidence based practices from experts and by the end the experts learn from the teams how to effectively adapt and implement those practices. Teams learn how to use The Model for Improvement/PDSA cycles, a key component of the IHI BTS model, to adapt, test and implement evidence based practices.

Evaluating the 'Let's Talk Chester County' Abstinence Education Project
Carley Prynn, MPH*, Research Associate, Center for Health Services and Policy Research, USC

The talk will address an evidence-based abstinence education curriculum (PHAT-AOI) providing medically accurate information was implemented in the middle schools along with extensive parent and community outreach efforts. This session will also describe the project, the process and impact evaluation measures used, and results of the evaluation.
**The impact of WIC on preventive dental utilization of young children**  
*Christine Veschusio*, MA, USC Student, D. Phuong Do, PhD, USC Assistant Professor

Objective: To determine the effect of the Special Supplemental Nutrition Program for Women, Infants and Children (WIC) on children's utilization of preventive dental services and whether the impact varied by dental Health Professional Shortage Area designations (DHPSA) or rurality. Data Sources/Study Setting The sample is composed of children aged 0-5 years who were enrolled in South Carolina's Medicaid between 2008-2010. Data were derived from South Carolina (SC) birth records and WIC, Medicaid enrollment, dental claims, and Area Resource files. Study Design To address unobserved confounding, child fixed-effect (FE) models were estimated and results were compared to benchmark estimates from pooled logistic regressions. Principal Findings Both logit and FE strategies indicated a positive association between WIC and preventive dental services utilization; however, the salutary effects were attenuated, though still statistically significant, in the fixed-effects models. Rural/urban residence and dental DHPSA status modified the relationship between WIC and dental utilization such that the strongest effect was in urban, geographic DHPSA. Conclusions WIC increased utilization of preventive dental services among children. The effect of WIC varied by area characteristics.

**Improving Coordination of Care: Implementation Strategies in South Carolina**  
Mark W. Massing, MD PhD MPH, The Carolinas Center for Medical Excellence

The Carolinas Center for Medical Excellence in its role as the Medicare Quality Improvement Organization (QIO) for South Carolina has been working with communities to across the state to understand and improve coordination of medical care. There is much variation in healthcare coordination effectiveness and in outcomes related to poor care transitions from one healthcare setting to another. Evidence-based interventions to improve interventions need to be implemented in a coordinated manner across multiple stakeholders in communities. We explore the barriers and considerations related to the implementations of care-coordination projects at the community level.

**Evaluation of two Preschool-Based Nutrition and Physical Activity Interventions**  
Besty Cashen, MPH, Research Associate, Center for Health Services and Policy Research, USC

Objectives: To learn about current Farm to School and Grow Healthy Toolkit implementation in South Carolina preschools. To identify multiple research ideas and opportunities for collaboration for testing the efficacy of nutrition and physical activity related programs in preschools.

**Getting To Outcomes: 10 Accountability Questions for Effective Planning, Implementation and Evaluation**  
Pam Imm, PhD, Annie Wright, PhD, Abe Wandersman, PhD, Shirley Smith, PhD, James Siddall, USC

No matter what field you work in, you want your work to achieve positive outcomes and have desired impact. Often times, well-conceived programs fail to achieve desired outcomes. Objective1: This presentation will first briefly present a framework of the Getting To OutcomesTM accountability system. GTO prompts organizations to ask and answer 10 questions about planning, implementing and evaluating the programs they provide. Objective2: The presentation will then focus on use of the Quality Implementation Tool (QIT). The QIT was developed to be used within the GTO system, to focus on quality implementation of services. The QIT was developed from a synthesis of the implementation science literature and provides a succinct and helpful way for organizations to ensure quality implementation. Simply put, if organizations want to achieve specific outcomes, they have to be able to implement programs with quality. Use of the QIT within the GTO framework can help organizations across content areas improve their implementation strategies and therefore contribute to better outcomes.