14th Annual Research and Scholarship Day

Research and scholarship across the nursing care continuum

Poster Session & Abstracts

TUESDAY
April 28th
This year’s Poster Session and Abstracts booklet showcases nursing-related research and evidence-based practice projects led by undergraduate and graduate students from the University of South Carolina. All student-led projects include involvement of a designated research mentor(s) from the USC College of Nursing.

The purpose of Research and Scholarship Day is to provide a collegial and interactive environment that:

- Highlights how research enhances nursing practice;
- Stimulates student interest in research; and
- Showcases student research and scholarship that advances nursing-related science.
P01. Promoting Breastfeeding among African American Women

Author: Jennifer Beecroft (Undergraduate student, Nursing)

Research Mentors: Joynelle L. Rivers, EdD, MSN, RNC
Tisha M. Felder, PhD, MSW

Funding Source: USC Institute for African American Research
USC Magellan Scholars Award

Background/Significance: Public health recommendations state that infants should be exclusively breastfed for the first 6 months of life, and should continue for at least 1 year as solid foods are introduced. Studies have shown that there are many benefits to the baby from breastfeeding including reduced rates of diabetes, allergies, and childhood obesity. Breastfeeding also provides benefits the mother. Research indicates that women who breastfeed may have a lower risk for developing breast and ovarian cancers. Despite these benefits, African American women have significantly lower rates of breastfeeding compared to women of other racial backgrounds.

Purpose: This study will examine pregnant African American women’s attitudes and perceptions toward breastfeeding.

Methods: Potential participants (n=50) will be recruited from the Palmetto Health Women’s Clinic in Columbia, South Carolina. Eligible participants must be 18 years or older, self-identify as African American, at be at least 20 weeks gestation. Patients will be asked to complete an anonymous, brief questionnaire assessing their socio-demographics (e.g., age, employment history), maternal history (e.g., number of children) and breastfeeding knowledge and attitudes using the Iowa Infant Feeding Attitudes Scale. Participants will receive $10 for their participation. Questionnaires will be analyzed using descriptive (e.g., frequencies, means) and inferential (e.g., chi-squares, t-tests) statistics, as appropriate. Relationships between variables (e.g., maternal attitude by history of breastfeeding) will also be assessed for statistically significant differences (p<0.05).

Current Results and Potential Implications: This study has currently been approved by the Palmetto Health Institutional Review Board. Data collection will begin April 2015. Findings from this study will contribute meaningful information about potential reasons why African American women do not initiate or continue breastfeeding. By asking these questions in early/mid pregnancy, nurses may have an opportunity to educate African American women on the benefits of breastfeeding and help them sustain a lasting mother-baby bond.
P02. Increasing Participation of Male Parents and Caregivers in Research on Child Sexual Abuse: A Critique of Sampling Methodologies

Author: Kate K. Chappell, MSN, APRN, PNP-BC (Graduate student, Nursing)

Research Mentors: Laura C. Hein, Ph.D., RN, NP, FAAN
DeAnne K. Hilfinger Messias, Ph.D., RN, FAAN

Background: The absence of male caregivers’ perspectives is a major limitation of existing research on parents’ perceptions of child sexual abuse (CSA) risk and prevention. Convenience sampling through health services have yielded disproportionately female samples. Yet males bring a unique perspective to parenting. Research on intra-family vigilance indicates females address daily needs while males focus more on sustaining the family unit. Investigators need to proactively recruit male participants to address male caregivers’ perceptions about CSA and vigilance.

Purpose: The aim of this systematic literature review was to critique three potential sampling methodologies to promote inclusion of male caregivers: recruitment of males via female parents; recruitment of specific children’s caregiver clusters; and community-based recruitment of male caregivers.

Methods: A systematic literature review used primary terms of “child sexual abuse”, “child abuse”, and “child maltreatment” with secondary term “parent perceptions.” An additional search used “recruiting fathers,” “recruiting males,” and “recruiting parents.”

Results: Recruitment of males via female caregivers can occur in clinics. Advantages include recruitment assistance by the dyad’s female, but recruitment is limited by extent of cooperation and connection between parents. Advantages of recruitment aimed at all adults within a specific child’s caregiving cluster include gaining a systems view with inclusion of a wider range of caregivers, such as grandfathers and stepfathers. Limitations include difficulty recruiting a sufficient number of clusters and adequate involvement within clusters. Focused male recruitment through community organizations addresses the under-sampled subgroup. Limitations may include difficulty accessing a sample with varied family roles and engagement.

Conclusions: Targeted recruitment of males as part of caregiving clusters addresses a knowledge gap in parenting research. Sampling via caregiving clusters will allow analysis of intersections and conflict amongst caregivers’ perspectives. Research is needed to describe male caregivers’ perceptions about CSA risk and vigilance to advance theoretical frameworks and practice-based interventions.
P03. Examining Relationships between Caregivers’ Adverse Childhood Experiences and Child Abuse Allegations

Author: Senna Desjardins (Undergraduate student, Nursing)

Research Mentors: Kate K. Chappell, MSN, APRN, CPNP  
Abbas Tavakoli, DrPH, MPH, ME

Annually, more than 10,000 children are victims of abuse or neglect in South Carolina. This study focused on investigating the relationship between caregivers’ adverse childhood experiences and occurrences of maltreatment within the current household. Over seventy caregivers were surveyed at two different Child Advocacy Centers. The ten-question Adverse Childhood Experiences (ACE) survey was used to determine adverse experiences in childhood, like abuse, parent divorce, and family mental health issues. Working with a statistics professor, the data will be compiled and analyzed to determine statistical significance. There are several different categories of abuse, including sexual abuse, neglect, and physical abuse. Part of the analysis will be done to determine if a relationship exists between the type of abuse and type of caregiver’s adverse childhood experience. In disseminating the results, the hope is to increase awareness about effects of a caregiver’s past on current allegations within the family while educating about development of prevention programs targeting caregivers of children.
The study explored potential linkages between quality of life (QOL) and cosmetic procedures for at-risk populations as defined by dermatology experts. This work begins to address the absence of evidence needed by practitioners and patients to guide decision-making about appropriate use and psychosocial outcomes of cosmetic procedures in groups conceptualized as at-risk by providers. A literature-driven questionnaire guided the semi-structured interviews with 5 expert providers. Provider experts were defined as individuals practicing in the field of cosmetic dermatology and have been convenience-sampled from practitioners in the state of South Carolina. Data collection methods include note taking and digital recording of interviews. Each interview lasted 20-30 minutes. Initial recording analysis utilized codes derived from the interview questionnaire and research questions. Additional codes were generated as researchers independently listened to the audio data. The data was analyzed by at least one of the study mentors and the student scholar. Researchers then met to compare coding, discuss themes and differences in interpretation. Recordings were reviewed and recoded as needed for clarification. Reflexivity was addressed as researchers recorded their thoughts and insights about the data and research process. Results are pending.
**P05. Food for Thought: Psychiatric Inpatient Nutritional Intervention**

**Author:** Elizabeth Eggebrecht (Undergraduate student, Nursing)

**Research Mentor:** Selina Hunt-McKinney, PhD, APRN, P/MHNP-BC

*Introduction/Purpose:* Individuals diagnosed with severe mental health disorders including schizophrenia, bipolar disorder, and severe depression die on average, 25 years earlier than those in the general population (Parks, 2006). Many premature deaths are related to cardiovascular disease (Newcomer et al., 2007). Excess morbidity is worsened by antipsychotic medications, which can induce weight gain, activity intolerance, and diabetes. To reduce excess morbidity, it is critical to address modifiable risk factors through health promotion interventions. Intake of fruits and vegetables are inversely associated with cardiovascular disease and all-cause mortality in prospective studies (Bazzano et al., 2002). Healthy inpatient dietary habits may translate to positive decision making upon discharge and reduction in morbidity among those suffering from mental illness. The purpose of this intervention was to implement a nutritional intervention to increase exposure to and availability of fresh produce on one inpatient psychiatric unit.

*Method:* Permission for the intervention was granted by the unit manager. Fresh produce was provided for patients through collaboration with food services staff, the unit secretary and delivered at snack time for a two week trial. Staff and patient acceptability and satisfaction were measured through observations, and informal surveys of patient/staff satisfaction and acceptability.

*Results:* Patients were offered crackers and cookies along with fruit at snack time. Approximately 80% of the patients independently selected fruit as snack. Patients expressed satisfaction and began asking for fruit. Fresh produce is now supplied to the unit at least three times weekly. Staff members commented on the ease of nutritional interventions with plans to continue the project.

*Implications:* Comprehensive patient wellness is a central nursing concept and critical to the reduction of excess morbidity in psychiatric patients. Evidenced based, health promotion interventions including provision of nutritious food choices should begin in inpatient settings when recovery planning is initiated.
A Review of Community-Based Recruitment Methods Applicable for a Study of African American Women's Perceptions of Activity and Rest

Author: Eboni Harris, MS, RN, FNP-BC (Graduate student, Nursing)

Research Mentor: DeAnne K. Hilfinger Messias, PhD, RN, FAAN

Background: Social, cultural, and environmental factors contribute to high rates of obesity and obesity-related disease among African American women. Understanding African American women’s perceptions of activity and rest is necessary for nurses to design culturally appropriate interventions to increase physical activity among this population. Rest has been identified in the literature as a factor preventing physical activity among African American women.

Method: The specific aim was assessing potential recruitment strategies to engage African American women aged 18-35 in a study of their perceptions of activity and rest. A targeted search of PubMed and CINAHL databases identified published research with African American women ages 18-35 years, health promotion and physical activity. Three types of community-based recruitment methods were examined.

Results: The primary advantage of online recruitment was cost effectiveness. A secondary advantage of online recruitment is a large pool of potential applicants can be recruited from multiple regions and countries. A challenge of online recruitment includes subject self-selection. Online recruitment was shown to be effective for participant recruitment regardless of economic status. One-on-one recruitment methods were effective in participant identification, selection, and retention for study completion. Challenges of one-on-one recruitment are time effectiveness and requirement of entrée to communities to access eligible participants. Faith-based recruitment are be effective due to the strength of social connectedness that impacts collective participation. The challenges of faith-based recruitment are similar to one-on-one recruitment.

Discussion: This review of the literature indicated benefits and advantages of recruitment utilizing online, one on one, and faith based contacts. Across all three methods, tapping into existing social networks improved effectiveness of recruitment and subsequent retention of African American participants. In determining the recruitment method for a study of African American women’s perceptions of rest and activity, consider inclusion criteria, geographic factors, cost, and availability of resources.
Winner of Best Undergraduate Poster Award

P07. Hispanic Clinical Simulation Workshops

Author: Amanda Hartman (Undergraduate student, Biochemistry and Molecular Biology)

Research Mentors: Robin Dawson Estrada, PhD, RN, PNP-BC and DeAnne K. Hilfinger Messias, PhD, RN, FAAN

Between 2000 and 2009, the Hispanic population in West Columbia grew by 12.8%. In response to this increased need for bilingual resources for patients with limited English proficiency, the University of South Carolina encourages students enrolled in Spanish courses to volunteer as interpreters at the Clinica del Buen Samaritano, a free bilingual medical clinic. Although this community service has benefits for all participants, students report they are often unprepared for these interactions due to the unfamiliar environment and vocabulary involved.

The purpose of this project was to improve student volunteer interpreter communication skills, and introduce pre-healthcare students to working with medical interpreters through participation in a role-playing workshop. In addition to the interpreters, two additional groups of students were recruited to play the role of “patients” (students enrolled in Spanish classes) and “healthcare providers” (nursing and pre-healthcare students). Before each workshop began, the “patient” consulted a script describing a healthcare scenario s/he would enact. The interpreter interviewed the “patient” independently and reported the information back to the “healthcare provider”, who then conducted an interpreter-mediated interview with the “patient”. Finally, the “patient’s” chart was completed per the direction of the healthcare provider. At the conclusion of the workshop, all three groups participated in an interactive, investigator-lead discussion evaluating the effectiveness of their interviews, challenges encountered, and strategies to improve interpreter-mediated communication. The workshop outcomes were evaluated by the participants’ ability to identify and correct any potential miscommunications during the discussion.

Post-workshop informal interviews with the student volunteer interpreters and healthcare students revealed an increased level of comprehension and confidence when interacting with clients. This project will be continued by the Clinica del Buen Samaritano to prepare future interpreters for the clinic.
Winner of Best Graduate Poster Award

P08. Storytelling as an Intervention for African American Cancer Survivors: What do we know?

Author: Pearman D. Hayne, MPH, BSN, RN (Graduate student, Nursing)
Research Mentors: Sue P. Heiney, PhD, RN, FAAN

Introduction: The use of storytelling is a unique area in nursing research. Storytelling interventions are particularly important for African Americans cancer survivors due to strong oral traditions within African American culture. Storytelling is used in nursing research to help patients cope, process, and heal from traumatic experiences. The therapeutic use of storytelling has been well documented, but limited research exists regarding its use as an intervention for African Americans with cancer. The purpose of this literature review is to determine the extent of the use storytelling as a cancer research intervention, particularly for African Americans.

Method(s): This literature review used the keywords, “narrative,” “storytelling,” and “story.” The databases contained in the review were CINAHL, PubMed, EBSCO Host, and Academic Search Complete. The search included all years and was restricted to English language and peer-reviewed articles. Articles involving the use of narrative analysis, narrative therapy, or theoretical discussion were excluded in the review.

Results: The initial search included 315 articles. After removing duplicates and screening for eligibility, a total of 17 peer-reviewed journal articles were identified. Thirteen articles described storytelling intervention pertaining to prevention, whereas four articles were related to cancer survivorship with only one intervention targeted to African Americans. Diagnoses included breast, colon and cervical cancer. Technology was identified as a major channel of communication with storytelling interventions using videos and computer programs.

Discussion & Conclusions: Numerous studies showed storytelling interventions improved cancer screenings and cancer communication among participants. When participants perceived similarities with the characters in the stories, they were more likely to identify with the messages. However, more research is needed using storytelling as an intervention for African Americans with cancer.
P09. Hepatitis C Virus management in an Infectious Diseases Clinic in Columbia, South Carolina

Authors: Magdalen Henderson (Undergraduate student, Nursing)
Alyce Ni, Sabra S. Custer, DNP, MS, FNP-BC, Divya Ahuja, MD

Research Mentor: Sabra S. Custer, DNP, MS, FNP-BC

Abstract: An estimated 3.2 million persons in the United States have chronic Hepatitis C virus infection and most infected persons are asymptomatic. The purpose of this poster is to do a descriptive analysis of an HCV/HIV coinfected cohort in an urban Infectious Diseases clinic in Columbia, SC. 75%–85% of people infected with Hepatitis C virus develop chronic infection and are at increased lifetime risk of cirrhosis, liver failure, and hepatocellular carcinoma. HCV is a leading cause of morbidity and mortality among persons living with HIV/AIDS (PLWHA). Widespread use of highly active antiretroviral therapy (HAART) has resulted in a dramatic decline in AIDS-related mortality and complications associated with chronic HCV. A database compiled at the Infectious Disease Clinic will provide a summary of demographics, care and treatment outcomes for HIV-HCV co-infected individuals from 2005 to 2014. The majority of patients are infected with HCV genotype 1a. Approximately 76% of persons in the database are co-infected with HCV and HIV and only 16.7% of all HCV infected persons in the database have attempted treatment.

Since the advent of directly acting antivirals (DAAs) in 2013 there has been a radical transformation in the treatment of HCV. Interferon-free regimens include NS34A protease inhibitors, NS5A inhibitors, and NS5B inhibitors and have Sustained Virological Responses (SVR) upwards of 90 percent in both HCV monoinfected as well as HIV/HCV coinfected patients. Through identification of the changes in treatment, this overview can offer healthcare providers and patients a better understanding of the best treatment options for HCV.
P10. Patient Accessibility to Chronic Myeloid Leukemia Treatment

Author: Brianna Jacobs (Undergraduate student, Pre-pharmacy)
Research Mentor: Tisha Felder, PhD, MSW

Background: Chronic Myeloid Leukemia (CML) is one of the four most common types of leukemia and occurs most frequently in older adults. The Federal Drug Administration has approved six drugs for the oral treatment of CML since 2001, one of which was Gleevec. Gleevec is an orally administered chemotherapy, which has significantly extended survival from CML. Gleevec is currently only available as a brand name drug, and the high cost of Gleevec and similar oral chemotherapies may present a major barrier to many CML patients accessing their treatment.

Study purpose: The purpose of this study is to explore existing resources that are available to assist CML patients with obtaining financial access to Gleevec.

Methods: Guided by Felder and Bennett's (2013) outline of patient assistance programs, a web-based search of publically accessible resources will be conducted. Example search terms include: 'Patient Assistance Programs,' AND 'Gleevec,' OR 'Imatinib Mesylate,' OR 'Chronic Myeloid Leukemia.' Data collection for this study is in progress. All data collected will be summarized and used to create a resource list that can be used by health care providers and patients.

Implications: Determining what prescription assistance programs are available for Gleevec and similar oral chemotherapies may be particularly important for CML patients facing financial barriers to accessing their treatment. Healthcare providers, such as nurses and pharmacists, can play a major role in informing patients about these resources and helping them navigate the application process.
P11. Evaluating Heart Failure Protocol Compliance and Patient Teaching to Reduce Patient Readmission

Authors: Mary A. Kraybill (Undergraduate student, Nursing)
Research Mentor: Kate K. Chappell, MSN, APRN, CPNP

Background: Readmission of heart failure (HF) patients is common. However, readmission within a 30 day period is typically preventable. When HF patients are readmitted within 30 days, hospitals are ineligible for Medicaid reimbursement. Most hospitals use nationally standardized, evidence-based quality measures as their HF protocol's foundation. Readmission rates and outcomes generally improve alongside protocol compliance with patient documentation, education, and discharge instruction.

Purpose: This quality improvement (QI) project will evaluate compliance with the Heart Failure Checklist on one cardiac tele-monitoring unit at a Level 1 hospital. Patient comprehension of HF teaching and their perceptions of the patient teaching process will be explored.

Methods: An audit tool with 20 key compliance measures from the hospital's HF protocol will be used to conduct 10 chart reviews with follow-up patient interviews to explore patient's perceptions and comprehension of education aspects of the HF protocol. This is a convenience sample of HF patients who are admitted to the unit during the study period. Eligible cases must be consistently alert and oriented and independent of a full time caregiver.

Results: Based on chart reviews, an overall score will be given to evaluate where documented practice is not coinciding with the HF checklist criteria. Descriptive statistics on overall scores and performance on HF checklist items will be presented. The aim is for 90% compliance. Patient interviews will be analyzed for themes related to their perception and understanding of teaching throughout hospitalization.

Conclusions: According to the hospital's standards of care and Hospital Consumer Assessment of Healthcare Providers and Systems scores, this unit's HF readmission rate is below standards. Results of this QI project will help identify gaps in documentation of care and aspects of patient teaching that are presently not well understood by patients. Suggestions for how healthcare providers can improve communication and overall outcomes for HF patients will be provided.
Critical Thinking in Nursing Education: Where Are We Now?

**Authors:** Kay Lawrence, MSN, RN, CCRN (Graduate student, Nursing), Rita Snyder, PhD, RN

**Research Mentor:** DeAnne K. Hilfinger Messias, PhD, RN, FAAN

**Background:** Since the 1980s, critical thinking has been considered an essential component of undergraduate nursing education. Early work on the definition of critical thinking was done in the late 1980s. Since that time, there has been limited development or refinement of initial definitions. As a result, critical thinking remains a complex, poorly defined concept, yet continues to be used extensively in nursing education. Existing definitions lack parsimony, consistent application, and clear explication in the nursing research literature. Many pedagogies are reported for teaching critical thinking to nursing students, but few rigorous research studies have validated these methods. Measurement of critical thinking remains problematic despite a number of commercially available instruments. This is primarily related to poor instrument validation and the time and cost of administration.

**Purpose:** The purpose of this project was to explore the current definitions, applications and measurement of critical thinking in nursing education.

**Method:** An in-depth literature review of critical thinking in nursing education was conducted ranging from historical context to current applications. Specific emphasis was placed on current definitions, pedagogies, and measurement approaches.

**Results:** A number of conflicting definitions were reported in the literature. Numerous instruments with varying level of psychometric validation were found. Pedagogies studied lacked rigorous evaluation evidence, particularly on their impact on student learning outcomes.

**Conclusions:** Several nursing educational research implications were identified. First, exploratory research should be conducted to enhance consistency of conceptual definition of critical thinking. Second, rigorous measurement methods need to be used to develop conceptually valid instruments for measuring critical thinking. Finally, rigorous evaluation methods need to be consistently used to determine which pedagogies are most effective in achieving critical thinking performance outcomes in undergraduate nursing students.
P13. Are We Adequately Prepared? Students’ Perspectives on Cultural and Linguistic Competency in Healthcare

Author: Jamie Lawson (Undergraduate student, Nursing)
Research Mentors: DeAnne K. Hilfinger Messias, PhD, RN, FAAN

The rapidly increasing Hispanic population in South Carolina and the United States highlights the growing demand for culturally and linguistically competent healthcare professionals. The purpose of this research was to assess undergraduate students’ exposure to principles and practices of cultural and linguistic competency and their level of preparedness to care for limited English proficient (LEP) patients. Data were collected through 3 audio-taped focus group interviews with pre-licensure nursing and healthcare professional students (n=8) and an online survey of upper-division nursing students (n=63). Qualitative descriptive analysis of the transcribed focus group data resulted in the identification of three main themes: the role of communication in healthcare; heightened emotions as an added layer to the asymmetry of language barriers in healthcare; and role switching as resulting in increased empathy towards limited English proficient individuals. Analysis of the survey data indicated that 74% of surveyed students report very little or no language proficiency in Spanish and 80% report feelings of inadequate preparedness to work with LEP patients. Participants’ responses to questions about their exposure to and perceived preparedness to care for LEP patients indicated reoccurring themes of disconnect between students’ exposure and level of preparedness. An overwhelming majority reporting feeling ill prepared to care for LEP patients. These findings will be useful in identifying areas of improvement in nursing and pre-professional curricula and the development of specific teaching/learning strategies to better prepare students to care for LEP patients.
P14. Prevalence and Health Effects of Intimate Partner Violence Among HIV+ Women

Author: Yu Min (Alyce) Ni (Undergraduate student, Nursing)
Research Mentors: Sabra S. Custer, DNP, MS, FNP-BC
Abbas Tavakoli, DrPH, MPH, ME

Background/purpose: Intimate partner violence (IPV) is a recognized national public health issue that includes physical abuse and unwanted or forced sexual contact by a partner. Numerous studies have documented the negative health consequences of IPV. There is evidence that IPV has a negative effect on the self-management of HIV, which is now a chronic disease. The purpose of this study was to use descriptive statistics and correlations to measure the prevalence of IPV and the possible effects of IPV among HIV+ women.

Method: We recruited a convenience sample of 200 HIV+ women at a Ryan White-funded clinic in Columbia, SC. The prevalence of IPV was assessed using the Severity of Violence Against Women Scale (SVAWS). The SVAWS is a 46-item Likert scale that assesses experiences with IPV over the last 12 months. In addition to a summary score of total IPV, the SVAWS also contains subcategories of types of IPV. Participants were also asked to report their most recent HIV viral load in order to gauge the management of their HIV.

Results/Conclusion: The Pearson correlation was used to examine the association between total levels of IPV, each subcategory of IPV, and viral load. There were significant moderate to strong positive linear relationships between viral load and violence subscales. The Pearson correlation for different subscales of violence and the HIV viral load ranged from .63 to .91. These results add further evidence of the possible negative impacts of IPV on the self-management of HIV. Larger and randomized samples of HIV+ women would provide more clarity of this possible association.
P15. A Historical Record of Rail Transportation Spills of Irritant Gas Syndrome Agents in Past 30 Years

Author: Todd Peterson (Undergraduate student, Nursing)

Research Mentors: Joan M. Culley, PhD, MPH, RN, CWOCN and Salvatore R. DiNardi, PhD, CIH, FAIHA

Introduction: Irritant Gas Syndrome Agent (IGSA) Mass Casualty Incidents (MCIs) (i.e. sulfur dioxide, chlorine, and anhydrous ammonia) pose a significant threat to life and require rapid medical assessment by first responders to reduce death and disability. The early identification of MCIs involving IGSA is essential to an appropriate and rapid response for decontamination, triage, and treatment that could save thousands of lives. Railroads are a major means of transportation for IGSA across the U.S.

Purpose: To develop a historical record of mass/frequency/volume of IGSA transported by rail to assist in the formulation of a methodology for a MCI response.

Methods:
1) Library databases were searched for information on rail transportation and related infrastructure on IGSA.
2) Google was used to search for rail incidents involving IGSA.
3) Tables were created to organize/analyze the data by incident.

Results: An analysis of the data within the last 30 years indicated: 1) More than 5 major IGSA incidents resulted in 10 deaths and more than 900 injuries. 2) IGSA incidents can be deadly e.g. Graniteville chlorine incident (2005) killed 9 and injured over 250 people. 3) Rail incidents are correlated to several factors (length, position, speed, rail infrastructure, etc.). 4) Small communities are not prepared to respond to IGSA MCI from rail accidents.

Conclusions/Implications: This data will be used by Dr. Culley’s research team to improve triage strategies for communities that experience MCIs related to IGSA. Publications and presentations of this data will increase awareness of risks associated with IGSA rail transport.