



**UNIVERSITY OF
GEORGIA**
College of Public Health

2020 MPH Virtual Poster
Showcase
Student Abstracts

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Evan Alden

MPH, Health Policy and Management
Advisor: Grace Bagwell-Adams, PhD

Underutilization of the Special Supplemental Program for Women and Children: A Breakdown of the Barriers

Purpose: This literature review compiled research relevant to the Special Supplemental Program for Women and Children (WIC) and the barriers to enrollment leading to underutilization by those who are eligible and in need of this social service. **Methods:** Using the University of Georgia's Multi-Search tool, which includes literature both owned by the university and outside sources that the university has access to, keywords such as "WIC underutilization", "WIC barriers", and "WIC enrollment" were used to find literature that would best help explain the underutilization of the program and the barriers that create this. **Results:** The literature revealed that there were three main categories of barriers: administrative and structural barriers, administrative and structural barriers plus social barriers, and factors contributing to late enrollment or early exit from the program. These barriers were also easily sorted into the categories of preventable barriers and non-preventable barriers, which became relevant in the discussion and conclusion. The literature revealed that many of these barriers were in fact preventable. **Conclusions:** The implication of this review was therefore that a decrease in preventable barriers would be the best way to increase enrollment and decrease underutilization. This strategy would remove hurdles for women having solely administrative issues, and decrease the hurdles for women experiencing non-preventable problems. However, it was also clear that the root cause of the underutilization needed to be reviewed in all cases, because the strategies for increased enrollment need to be tailored to the root cause in order to be most effective.

Diane Ayuninjam

PharmD/MPH, Health Promotion and Behavior
Advisor: Pamela Orpinas, PhD

Breast is best: promoting breastfeeding in community pharmacies

Background: Pharmacists are in a great position to promote breastfeeding. The World Health Organization recommends mothers to breastfeed exclusively for the first six months with complementary food and continued breastfeeding for up to two years. The Center for Disease Control and Prevention encourages mothers to breastfeed their infants for at least one year. **Purpose:** The objective of this study is to assess the quality of pharmacists' counseling of nursing mothers and compare pharmacists' knowledge about breastfeeding in rural and metropolitan Georgia. **Methods:** Interview questions were created to assess pharmacists' breastfeeding knowledge. Data were collected using a standardized telephone interview of 20 pharmacists working in the Atlanta area and 20 working in rural Southeastern Georgia. Chi-square test was used to examine associations between categorical variables. The interviewer

recorded the impressions and attitudes of the pharmacists. **Results:** Pharmacists' knowledge of breastfeeding was generally low: over one fourth did not know when to initiate breastfeeding, half did not know about recommended breastfeeding duration, and over half did not know or had incorrect information about when to add solid food. Almost half did not know about community resources for breastfeeding, and over a third did not know about whether breastfeeding in public is allowed. Differences between pharmacists working metro and rural areas were not significant. Reversely, attitudes and impressions were overall positive. **Discussion:** Targeted breastfeeding education for pharmacists is necessary so pharmacists can develop interventions that encourage breastfeeding in mothers.

Abirami Balajee

MPH, Epidemiology

Advisor: Juliet Sekandi, PhD

Characteristics of adults hospitalized with viral lower respiratory tract infections, Louisville, Kentucky, 2010-2013

Purpose: Viral lower respiratory tract infections (LRTI) cause significant morbidity and mortality. This study describes clinical and demographic characteristics of adults hospitalized with viral LRTI and the detections of respiratory viruses associated with LRTI. **Methods:** This is a cross-sectional secondary analysis of data from a clinical trial conducted over influenza seasons from 2010-2013 that enrolled adults hospitalized with acute LRTI, which was defined as two respiratory signs or symptoms and one sign of acute infection. Microbiological testing was conducted at baseline for 95% of patients. **Results:** Of 1,281 LRTI-case patients, 35% had viral LRTI, 11% had bacterial or fungal LRTI, and 55% had LRTI of unknown etiology. Bacterial or fungal LRTI case-patients had a higher mean pneumonia severity index, longer hospital stays, and a higher proportion admitted to the ICU. Influenza (A and B) and rhinovirus were detected most frequently among respiratory viruses. Respiratory syncytial viruses (A and B), metapneumovirus, coronaviruses (229E, OC43, NL63), parainfluenza viruses (1, 3, and 4), and adenovirus were also detected. Interpretations: Host factors make it difficult to determine causative agents of LRTI. While viral LRTI was more common, bacterial or fungal LRTI case-patients had the most severe disease. The prevalence of influenza and rhinovirus is expected due to enrollment occurring during their seasons. **Conclusion:** Considering recent pandemics such as COVID-19, it is important to understand what risk factors and viruses are associated with hospitalization due to severe respiratory viral infection. This can help guide public health and healthcare decision-making and preparation.

Sarah Barkley

MPH, Epidemiology

Advisor: Andrea Swartzendruber, PhD

Unintentional Childhood Injury Prevalence and Prevention Program in Georgia in 2018

Purpose: Unintentional injury is the leading cause of death in children in the United States under the age of 19. Safe Kids Georgia is a nonprofit organization focused on injury prevention in children through outreach and education by supporting local coalitions in 54 counties. In this study, I investigated associations between the presence of Safe Kids Georgia programming and leading injury outcomes across counties in Georgia. **Methods:** Injuries due to falls, motor vehicle crashes, and accidental poisonings were measured by emergency room visit rates per 100,00 children in each county in Georgia. Emergency room visit rates were obtained from the Georgia Department of Public Health's Online Analytical Statistical Information System. Simple and adjusted linear regression models were constructed across age strata for each injury type to examine associations between Safe Kids Georgia coalitions and injury outcomes. **Results:** Simple regression supported Safe Kids Georgia coalition presence as a significant predictor in emergency room visit rates in some age groups. Once adjusted for population size and proportion of the population size below the federal poverty line, results indicated that population size was more frequently a significant predictor of emergency room visits due to falls, motor vehicle crashes, and accidental poisonings. **Conclusions:** The relationship between education and outreach focused programming and injury outcomes is complicated and various external factors may be at play. Further investigation may be done should Safe Kids Georgia coalitions expand to more Georgia counties, allowing for a better understanding of differences between urban and rural populations and how these differences impact injury outcomes.

Anna Chocallo

MPH, Disaster Management

Advisor: Curtis Harris, PhD

Spillover: A One Health Outbreak Investigation

Purpose: The threat of novel zoonotic diseases will require interdisciplinary collaboration by healthcare professionals in order to promote positive health outcomes, respond effectively to infectious disease epidemics, and foster a safer health system. Interprofessional education (IPE) is one proven method for strengthening a collaborative practice in healthcare. While research has demonstrated the positive effects of healthcare IPE in enabling acquisition of knowledge and skills necessary for collaborative work, no studies have addressed One Health IPE in pre-professional students. **Methods:** A One Health Outbreak Simulation, titled Spillover, occurred which involved a fictitious scenario of African Swine Fever Virus (ASFV) that infected humans as a novel host. Graduate/professional school students (n=31) from five One Health-related disciplines participated in the event through tabletop exercises, functional activities, and presentations from Centers for Disease Control and Prevention (CDC) officers. The effects of the Spillover simulation were documented quantitatively through a Pre-Intervention and Post-Intervention Questionnaire. **Results:** After the simulation, participants were more likely to find interdisciplinary coordination among One Health disciplines important and state a higher level of confidence in outbreak response activities. Participants also rated Spillover's activities as effective, which is an important quality for elective IPEs. In the article written about Spillover, participants, faculty, and CDC volunteers illustrated the IPE's applicability to One Health and its importance for collaborative practice. **Conclusions:** The Spillover simulation exhibited the benefit of One Health IPE in preparing the next generation of health professionals for the novel infectious diseases of the future.

Bailey Collette

MPH, Health Promotion and Behavior

Advisor: Jenay Beer, PhD

Robot-led piano lessons improve cognitive function: A feasibility study in a sample with mild cognitive impairment

Background and Objectives: Cognitive training has been shown to increase neural plasticity and cognitive reserve, potentially reducing the risk of developing dementia. Music learning, specifically piano playing, has been shown to be an effective form of multimodal cognitive training. However, some older adults are unable to access traditional music lessons. Socially assistive robots (SAR) have been used to successfully provide cognitive training. This study explored the feasibility and efficacy of using a SAR to provide a piano learning cognitive training intervention to older adults with mild cognitive impairment. **Research Design and Methods:** Participants (N=11) engaged in a four-week feasibility study, which included one, one-hour piano lesson per week led by a remotely controlled SAR. The Telephone Interview for Cognitive

Status and Mini Mental State Examination were administered upon enrollment to determine global cognitive function and the presence (or absence) of cognitive impairment among participants. The CNS Vital Signs computerized testing platform was used to assess domain specific cognitive functioning during visits one and four. **Results:** Participants experienced improved cognitive function in the verbal memory ($p=0.04$), executive function ($p=0.01$), reaction time ($p=0.04$), and cognitive flexibility ($p=0.003$) domains, as well as in the computed neurocognitive index score ($p=0.03$) between visits 1 and 4. **Discussion and Implications:** SAR have the potential to provide multidomain cognitive training in the form of piano lessons for older adults with mild cognitive impairment, especially among those who cannot access traditional services. Further research is underway to examine lasting improvements in cognition and use of an autonomous SAR.

Cameron Conner

MPH, Health Promotion and Behavior
Advisor: Deanna Walters, PhD

An evaluation of Stop the Bleed educational training in K-12 Schools

Purpose: The purpose of this research is to determine the effectiveness of the Stop the Bleed class among school staff and faculty in EMS Region 10 of Georgia. **Methods:** This quasi-experimental descriptive evaluation of the ongoing Stop the Bleed educational course was held in EMS Region 10 of Georgia with a convenience sample of 44 participants. Researchers implemented a pretest/posttest evaluation design. Data were collected from 2 classes that were hosted during the Spring 2020 academic semester. Dates for the Stop the Bleed classes were coordinated between researchers, educators, and school officials. Participants were able to self-select into the class upon learning of its offering. Pre-tests and post-tests were created using extant evaluation tools provided by the American College of Surgeons (ACS). Researchers conducted paired samples t-tests to evaluate the effectiveness of the class on variables of interest. **Results:** The results of the paired samples t-tests yielded 3 significant results. Researchers found that there was a significant change in participant confidence to apply a tourniquet in the event of life-threatening bleeding and pack a wound in the event of life-threatening bleeding. There was also a significant change in participant likeliness to intervene on behalf of a bleeding survivor. Other variables of interest yielded no significant change from baseline to post-intervention. **Interpretation:** This was the first attempt at applying evaluation measures to GTC-sponsored Stop the Bleed in EMS Region 10 of Georgia. The evaluation shows that the class was effective at changing participant self-efficacy to utilize some of the learned bleeding control skills from the class in a positive manner. Results showed that the sample was highly confident in utilizing many of these skills at baseline. This is likely the result of having an experienced sample. Nearly 75% of participants reported having had a First Aid or CPR class. The small sample size limits the generalizability of these findings and more research needs to be conducted to truly determine the effectiveness of this class.

Lindsey Day

DVM/MPH, Disaster Management
Advisor: Curtis Harris, PhD

The role of veterinarians in mass casualty disasters

Introduction: The need to prepare veterinarians to serve as part of the disaster medical response for mass casualty incidents has been recognized since at least the 1960's. The potential value of incorporating veterinarians for mass casualty disaster response has been noted by organizations throughout the world. **Current Environment:** Veterinarians are highly trained medical professionals with access to equipment, medications, and treatment capabilities that can be leveraged in times of crisis. The ongoing threat of disasters with the current widespread healthcare access shortages requires the disaster management community to address the ethical constraints, training deficiencies and legal limitations for veterinary medical response to mass casualty disasters. **Discussion:** An ethical imperative exists for veterinarians with translatable clinical skills to provide care to humans in the event of a mass casualty disaster in the absence of alternative traditional medical resources. Though this imperative exists, there is no established training mechanism to prepare veterinarians for the provision of emergency medical care to humans. In addition, the threat of legal repercussions (without clear guidance as to which disaster conditions in which the statutes would not be enforced) persist as barriers to rapid and effective response of veterinarians to mass casualty disasters. Measures need to be undertaken at all levels of government to address and remove the barriers. Failure to do so reduces medical resources available to an already strained medical system during mass casualty events.

Thais Diaz

MPH, Health Promotion and Behavior
Advisor: Lisa Renzi-Hammond, PhD

How perceptions and attitudes about dining environments shape the healthiness of food choices

Objectives: Dietary interventions aimed at promoting long-term dietary change seldom address other factors that contribute to food choices, such as social and environmental aspects of eating. The purpose of this study was to determine the relationship between perceptions of dining environment and food choice in a large college dining environment. **Methods:** Five-hundred students ($M = 19.65 \pm 1.83$ years; 64% Non-Hispanic Caucasian; 44% Female) at a large, Southeastern university were selected for participation from each of the five campus dining halls ($n = 100$ / dining hall). Student diners were approached and asked to complete surveys after they had selected food and were ready to eat. Survey items measured attitudes and perceptions of the healthiness of the dining halls, basic demographic variables, and other exploratory variables, such as psychosocial stress and GPA. Students in the dining hall ranked as

“healthiest” of the five dining halls were significantly less confident in their ability to make healthy food choices ($p = 0.002$) and rated the healthiness of the food on their plate significantly lower ($p = 0.003$) than students in the dining hall ranked as the most conducive of social engagement. **Conclusions:** The relation between choosing healthier foods, the setting in which one eats, and the companions one eats with is complex and should be considered when designing nutritional interventions.

Keywords: college students; dining environment; food choice; institutional dining environments

Avery Duncan

BS/MPH, Epidemiology

Advisors: Toni Miles, MD, PhD and Amanda Brown, JD

Analysis of COVID-19 in long term care facilities in The United States

Objectives: To evaluate the current healthcare landscape in long-term care facilities in regard to their readiness for infectious disease control in the event of a viral pandemic that targets vulnerable populations. **Methods:** Examining publicly accessible literature from Centers for Medicare and Medicaid Services to assess vulnerabilities in currently LTC facility practices that may lead to widespread infection among residents, workers, and visitors. Specifically comparing nursing homes in Washington State, location of the United States COVID-19 patient 0, to those in Georgia. Additionally, current infectious disease protocols and educational content will be analyzed to determine the extent of widespread infection control adoption among long-term care facilities. **Results:** Facility A in Washington State is a 5-star facility, had almost double the number of health citations when compared to Facility B, in Georgia, as well as, having double the amount of fines during the same three-year time frame. One of those citations was for not having an infectious disease protocol. In addition, *Comagine*, Washington State’s Quality Improvement Organization does not provide resources on infection control while *Alliant*, Georgia’s Quality Improvement Organization provides infection control in an online education training. **Conclusions:** Long term care has characteristics that aide in the transmission of COVID-19. These include sharing healthcare workers from different facilities, multiple quality of care health citations, and not having infectious disease control protocols in place. More resources need to be invested into creating a nation-wide infection control training program to prevent future large-scale outbreaks.

Brandon Dunlap

MPH, Health Promotion and Behavior

Advisor: Lisa Renzi-Hammond, PhD

Mental health and help-seeking behaviors: a cross-sectional study of undergraduate students at The University of Georgia

Purpose: Mental illness disproportionately affects college-aged adults and is associated with severe outcomes such as student drop-out and suicide if left untreated. Recent studies report that few college students in the U.S. seek help for mental distress and report limited use of mental health services. Perceived mental health stigma is one potential barrier to using mental healthcare resources and may shape help-seeking behaviors. The purpose of this study was to examine the relation between perceived stigma and mental healthcare among students at the University of Georgia. **Methods:** An electronic survey was given to undergraduate students at The University of Georgia, using the Qualtrics online survey platform. The survey was distributed to undergraduate users of the Research Participation (RP) pool. Although the RP pool closed early due to the global COVID-19 pandemic, a total of nine students (M = 19.56 +/- 1.25 years; 66.67% Caucasian; & 44.44% Female) participated. **Results:** Participants reported low perceived personal stigma; associated with mental; low perceived public stigma; favorable attitudes towards help-seeking behaviors; more comfort discussing mental illness & seeking help with friends than family. **Interpretation:** Social support from friends may reduce mental health stigma. Family may contribute more to perceived stigma mental illness than social peer groups among college students. **Conclusion:** Future research should focus on any changes in mental health, mental health related stigma and help-seeking behaviors among students at The University of Georgia after the COVID-19 pandemic.

Madeline Eason

BS/MPH, Gerontology

Advisor: Jenay Beer, PhD

Dementia, Caregivers, and Public Health: How The University of Georgia Institute of Gerontology Cognitive Aging Research and Education Center Can Inform Future Practice

Purpose: Using quantitative and qualitative data collected from those living with dementia and their care partners in Athens, Georgia, this project was designed to inform the future public health educational outreach programming of the Institute of Gerontology Cognitive Aging Research and Education (CARE) Center. **Methods:** This project was comprised of two studies. Study one involved analyzing survey data from dementia education program participants to improve future programming, and study two involved interviewing care partners to discover existing resources for dementia and caregiving. The first study used a pre-test/post-test design via surveys. The second study used in-depth exploratory interviews. **Results:** Six total participants completed both the pre and post-program surveys from study one. There was a trending change from a wider, lower frequency answers distribution to single higher frequency

peak on the post-survey answers corresponding to agreement on confidence and knowledge questions. The four interviews conducted in study two yielded themes in four main categories: doctors/clinics, dementia/other health, information/resources, and caregiving/other support. **Interpretation:** Both studies found a varied diagnosis experience between participants, which calls for public health services that are equipped to meet varied needs. Also, access to reliable information and more opportunities for peer support were important themes due to the persistence of stigma. **Conclusion:** Ultimately, this study utilized evidence from key stakeholders to support both educational outreach programming and increased access to trustworthy resources for those living with dementia and their caregivers in Athens, Georgia.

Sarah Eller

MPH, Health Promotion and Behavior
Advisor: Heather Padilla, PhD

Using the Social Ecological Model to Compare Maternity and Family Leave Policy and its Effect on Health Outcomes in the United States, Canada, and the United Kingdom

Purpose: Most developed countries mandate paid maternity leave for mothers with newborn or newly adopted children. The enactment of these policies has been associated with reduced rates of child mortality and increased child development. The United States is one of the only developed countries that has not implemented a national paid maternity leave policy.

Methods: An online database search was conducted to find articles on maternity leave policy and child outcomes in the United States, Canada, and the United Kingdom. The online search yielded 34 sources. Twenty articles were selected for full-text review. Data gathered from the articles was organized by the four levels of the Social Ecological Model. **Results:** Higher education and income and increased prevalence and duration of breastfeeding are positively associated with child health outcomes. Increased parental involvement as a result of extended paid maternity leave allows parents to improve the level of preventive care a child receives. Increased levels of preventative care typically decrease rates of infection and child mortality. Workplace flexibility plays a major role in parental involvement, which influences child development. Critics of national paid maternity leave policy argue that such policies could reduce business profitability, productivity, and job retention. Data indicates that employers report that paid maternity leave increased employee engagement and retention and reduced business costs. **Interpretation and Conclusion:** Implementing national paid maternity leave in the U.S. would allow new mothers to take the leave necessary to ensure their child's physical, cognitive, and emotional well-being.

Nikki Fillingim

MBA/MPH, Health Policy and Management

Advisor: Janani Thapa, PhD

The Public Economic Consequences of Nonmedical Use of Prescription Opioids in United States Adolescents Attributed to Morbidity and Premature Mortality

Purpose: The purpose of the current study is to examine estimated loss in government revenue attributed to opioid-related morbidity and premature mortality through the government public economic perspective. **Methods:** A life course scenario-based fiscal model was developed. Three scenarios, including baseline, were designed to illustrate the opioid epidemic's burden on government revenue. The scenarios are: 1) a scenario which represents a person within the general population who does not have an opioid addiction or other morbidities, 2) a scenario in which a person experiences periods of prolonged addiction and absence from the workforce, and 3) and a final scenario in which a person succumbs to opioid addiction during adolescence. There are three major inputs within the model: age-specific wages, federal government revenue, and government transfer payments. All fiscal modelling was conducted in Microsoft Excel. **Results:** The person who succumbs to premature opioid-related mortality generates only \$6,939 in estimated lifetime tax revenue, whereas the person addicted throughout their productive life generated \$295,303 in estimated lifetime tax revenue generation. Compared to the baseline's estimated lifetime tax revenue generation of \$493,421, premature death attributed to opioids and prolonged addiction pose governmental revenue losses. **Discussion:** The current study contributes to the growing discussion on the role of opioid-related morbidity and premature mortality on government revenue and transfer payments. This study serves to inform policy makers on the dollars lost in government revenue for each U.S. person lost to addiction.

Mariana Gould

MHA/MPH, Health Policy and Management

Advisor: Lesley Clack, ScD

Assessing the diagnosis and treatment of pain and its impact on the opioid epidemic

Purpose: The purpose of this research study is to evaluate and understand how medical residents were taught to diagnose and understand the subjectivity of pain. This is an important area to study in public health because of the opioid epidemic we are currently experiencing. **Methods:** A survey was created on the Qualtrics platform and sent out to fifty-five residents at Piedmont Athens Regional Hospital in the Graduate Medical Education Department. The survey included eighteen questions consisting of multiple-choice questions, interval scale questions, and open-ended questions. **Results:** The response rate to the survey was 14.5%, with responses from eight out of fifty-five residents. It was found that 100% of the respondents did not feel they entered their residency program with a strong understanding of how to treat pain. **Conclusion:** This research suggests that medical schools across the world need to improve upon

teaching their students how to diagnose pain. It was evident that the diagnosis of pain is very much subjective, and physicians would like other ways to diagnose pain. The research also found that not all physicians classify pain the same way. It is clear that there is a problem with opioids and opioid-related deaths and addictions. These findings suggest where change needs to start in order to alleviate this epidemic.

Joseph Greer

PharmD/MPH, Health Policy and Management
Advisor: Jessica Knight, PhD

Outcomes of a Pharmacist Chronic Kidney Disease Medication Evaluation Service for Diabetes Patients at a Nurse Practitioner Managed Free Clinic

Purpose: Medication errors are the result of mistakes made by a healthcare professional related to drugs taken by a patient. Medication errors cause negative health effects for patients, especially those who suffer from chronic diseases. Clinical pharmacists can provide medication reviews, a service designed to identify medication errors. Pharmacists may improve patient health by intervening on these errors. **Methods:** A descriptive study was performed with a population of 72 patients at two free health care clinics. Pharmacy students reviewed profiles of individuals with a diagnosis of both diabetes and chronic kidney disease to identify the presence of medication errors. **Results:** Nine medication errors were identified among nine different patients. Eight medication errors were due to the presence of drug-drug interactions and one medication error was due to a medication being contraindicated for patients with chronic kidney disease. All medication errors were accepted by the patient's providers and resulted in a change of therapy. **Interpretation:** By allowing two pharmacy students to perform medication reviews on patients, a medication error was identified in greater than 10% of the population. The majority of medication errors were due to interactions between medications commonly prescribed for diabetes. Future studies should perform follow-up reviews of patients to assess the benefit of medication interventions. **Conclusion:** Clinical pharmacy services are capable of identifying medication errors among patients being treated for chronic diseases at outpatient clinics.

Angela Griffin

MPH, Health Promotion and Behavior
Advisor: Rebecca Wells, PhD

Purpose: Injuries are highly preventable; however, rates of injuries and injury-related deaths are steadily increasing. A significant factor contributing to the increase in injuries and injury-related deaths in the U.S. is gun violence. Firearm-related injuries and gun control research has produced inconsistent data due the lowering of Federal funding allowed to conduct gun violence research. Currently, the U.S. has the highest rate of gun ownership in the world, with more than 393 million guns in circulation, which is higher than the total U.S. population of approximately 328 million people. Firearms contribute to the increase in rates in homicides, suicides, unintentional shootings, and serious injuries. Internationally, the homicide rate in the

U.S. is 25 times higher than in other high-income countries, and the rate of gun suicide is ten times higher than in other countries. In 2017, There were 36,383 Americans that are killed by guns each year, and 73,330 shot and injured. States that have higher rates of firearm-related suicides and homicides also have some of the most lenient gun control laws. Access to firearms that are in the home, or those that can easily be obtained from other family and friends, doubles the risk of dying by homicide and triples the risk of dying by suicide. Although gun violence affects all communities, rates of gun violence disproportionately impact communities of color, women, and other marginalized groups. Community-based violence intervention programs are effective in addressing gun violence because this type of intervention includes coordination of existing resources and activities that already exist in promoting antiviolence strategies.

Meghan Hardison

MPH, Environmental Health Science
Advisor: Luke Naeher, PhD

Gravimetric PM2.5 and BC Comparisons for HAPIN Filter Analysis Labs at UGA and in Guatemala

Purpose: The Naeher lab at UGA is in collaboration with the Household Air Pollution Intervention Network (HAPIN), a study working with countries in the developing world to introduce alternatives to traditional biomass-burning cookstoves. The filter analysis lab at UGA currently generates exposure assessment data for the HAPIN study site in Guatemala. An inter-laboratory comparison was done to assess preliminary inter-lab and intra-lab data of the newly-constructed HAPIN filter analysis lab at the Universidad del Valle de Guatemala (UVG).

Methods: Particulate matter less than 2.5 micrometers (PM2.5) and black carbon (BC) were assessed by comparing mass deposition of the same sets of pre and post-sampled filters at each lab. PM2.5 was measured using gravimetric data and BC was measured using attenuation values. Variability within UVG and compared to UGA was assessed. **Results:** For PM2.5, agreement of 15mm pre and post-weights was strong within the UVG lab and with the UGA lab. Agreement within UVG for 37mm pre and post-weights was strong, but poor between labs with UVG giving systematically higher weights. There was strong agreement of BC analysis within UVG and between UGA for both 15mm and 37mm post-samples. **Interpretation:** The results of this inter-lab comparison suggest equivalent gravimetric capabilities for pre and post 15mm filters and BC analysis for 15mm and post 37mm filters. UVG produced systematically higher gravimetric data for 37mm filters. A correction factor will most likely be needed to account for systematic bias in gravimetric data for 37mm filters. **Conclusion:** This evaluation will contribute to a larger, more official experiment to determine comparability of HAPIN filter analysis labs with the goal of the UVG lab to generate on-site data for HAPIN and establish capabilities for future air pollution evaluation.

Molly Heinlein

BS/MPH, Health Policy and Management

Advisor: Grace Bagwell-Adams, PhD

Purpose: The opioid crisis claims thousands of lives each year, burdening not only the friends and families of those killed by an overdose, but also the U.S. healthcare system and economy. Naloxone is a lifesaving medication that is available in all 50 states without prescription. The purpose of this paper is to examine Naloxone access for laypeople as a harm reduction strategy to address the ongoing epidemic and frame the diffusion of Naloxone policy across the country.

Methods: A literature review was conducted to analyze the effectiveness of expanding Naloxone access laws in decreasing opioid-related fatalities. Sources included articles from peer-reviewed journals between 2010 – 2020. Policy frameworks bounded rationality and innovation and diffusion were used to illustrate the diffusion of Naloxone policy. **Results:** The literature on the effectiveness of Naloxone expansion among laypeople to reduce fatal overdoses is limited and conflicted. Few studies examine this topic, and not all agree on the outcomes. Bounded rationality and innovation and diffusion framework illustrate that Naloxone access laws were passed rapidly based on limited information available and the effect of policy innovations spreading within certain regions. Interpretation: The results of this paper illustrate the rapid transformation in Naloxone policy and the conflicted literature, yet more research is needed to determine the next steps to address the opioid crisis. **Conclusion:** Future research should include larger sample sizes on a national level, county level analysis, and take into account any geographical spillover effects.

Julia Hennig

MPH, Health Promotion and Behavior

Advisor: Heather Padilla, PhD

Slow and Steady Wins the Race: Examining Participant Engagement in Telephone and Group Health Coaching in the Fuel Your Life Program

Purpose: The aims of this study were to (1) identify differences in participant engagement levels between telephone and group health coaching during Fuel Your Life (FYL) and (2) provide implications of which mode of program delivery is most effective for behavior change and chronic disease management. **Methods:** An experimental, randomized controlled design was implemented at three city-county governments in Georgia. Data were obtained from program resources maintained by health coaches on participant self-monitoring and engagement. Statistical analyses were conducted using chi-squared tests and independent samples t-tests. **Results:** A higher proportion of participants in the group condition reported self-monitoring, while the phone condition reported higher levels of physical activity, although not significant. A higher proportion of group condition participants reported reading all of the lessons and completing all of the action plan whereas a higher proportion of phone condition participants reported doing some of these activities. Overall, the phone condition participants had a higher

overall engagement score. **Interpretation:** Higher levels of variability in group condition responses, in part, explain the higher overall engagement score observed in the the phone condition. Group condition variability could be due to varying levels of cohesion and social support between the groups. **Conclusion:** Previous FYL studies indicate that the phone condition lost more weight. High engagement coupled with self-monitoring habits and goal setting suggest that participants who receive phone coaching may have better results in achieving desired behavior change and chronic disease monitoring.

Leah Holcomb

MPH, Health Promotion and Behavior

Advisor: Nate Hansen, PhD

Maternal Health Outcomes and Clinical Care: A Review of the Literature

Purpose: Maternal mortality remains a significant health issue in the United States, where an estimated two out of three deaths are preventable. Georgia consistently ranks as the worst state for maternal mortality. Improvements within prenatal and postpartum care delivery is an understudied area within public health. **Methods:** This review examined 75 articles focused on clinical care and race and their relation to maternal morbidity and mortality. Recommendations for care delivery improvement were examined in detail. **Results:** Overall, racial bias in healthcare, poor access to quality prenatal and postpartum care, limited patient-provider communication, and a lack of standardized recommendations remain significant predictors of maternal health outcomes. **Interpretation:** Without improved training standards to improve communication and lower implicit bias levels, maternal health outcomes in the U.S. will not improve. Expansion of care, particularly for vulnerable and underserved populations is vital. **Conclusion:** A focus on prevention and health promotion interventions will allow for improved maternal health outcomes and work to decrease maternal mortality rates. A shift to including these women at risk of maternal mortality in the discussion about maternal health will be essential to reversing the upward trend of maternal mortality in the U.S.

Samantha Jackson

MPH, Epidemiology

Advisor: Juliet Sekandi, PhD

Mobile Phone Use and Depressive Symptoms Among College Students in Uganda

Purpose: Mobile phone usage has rapidly increased both in Uganda and across the globe. Both negative and positive impacts of mobile phone accessibility have been discovered, which specifically impact individuals' psychosocial wellbeing. **Methods:** A cross-sectional online survey was administered to 400 undergraduate students in the second through fourth year of study attending an urban university in Kampala, Uganda. The main independent variable was average phone usage, collected as hours per day, and categorized into light, moderate, and heavy usage categories. The dependent variable was self-reported depressive symptoms, measured by the

Center for Epidemiologic Studies Depression Scale (CES-D 20). Logistic regression was performed using CES-D score and predictor variables age, sex, region, academic year, phone use, use of social networking, and academic program. **Results:** The mean phone use per day was 6.2 hours (SD=3.6), with 91% of respondents reporting use of social networks. Factors that were significantly associated with self-reported depressive symptoms included younger age (AOR 2.94, p=0.006), academic program (AOR 1.69, p=0.0004), and use of social networking (AOR 3.86, p=0.0038). **Interpretation:** Over half (55%) of the sample population self-reported depressive symptoms, as indicated by a CES-D score of ≥ 16 . Younger students were nearly three times, education majors nearly two times, and students who used social media nearly four more likely to self-report depressive symptoms. **Conclusion:** By determining the groups of individuals at-risk of developing depressive symptoms, interventions can be created, and the prevalence of depression reduced among Ugandan college students.

Christen Jackson

MPH, Health Promotion and Behavior
Advisor: Jessica Mulenburg, PhD

School-based intergenerational mentoring in Georgia: adolescents and older adults

Purpose: Intergenerational programs actively engage both youth and older adults in activities that are mutually beneficial for both parties. There has been a recent push for more intergenerational mentoring programs. Adolescents and older adults are population groups that are not often paired together for school-based intergenerational mentoring although they have much to gain from each other. In Georgia, there is little information of school-based intergenerational mentoring programs. **Methods:** This literature review seeks to explore benefits and improvements areas for school-based intergenerational mentoring from the standpoint of adolescents (10-17 years) and older adults (65 and older) in Georgia school systems. **Interpretation and Conclusion:** Critical considerations for Georgia include: (1) more overall awareness for intergenerational mentoring; (2) widespread promotion of school-based intergenerational mentoring to schools; (3) ensuring school-based intergenerational mentoring programs are grounded in theories and models; (4) advocating for school-based intergenerational mentoring within older adults and (5) evaluating school-based intergenerational mentoring programs in Georgia.

Nahyo Jalajel

MPH, Health Policy and Management
Advisor: Stacy Zhang, PhD

Burnout among nurses and the correlation to turnover within health care organizations

Purpose: To determine whether professional burnout is prevalent among registered nurses and to examine the correlation of burnout to the nurse turnover rate within health care organizations. **Methods:** In this cross-sectional study, 43 female registered nurses completed an

18-question survey that examined the participants' demographics, specifics to nursing, burnout, coping strategies, turnover, and healthy and unhealthy work environments for nurses. **Results:** Respondents were composed 18 African Americans and 25 Caucasians primarily between the ages of 21 to 50 years old. Sixty-two percent of nurses were married and over half had at least one child. Approximately, 76 percent of the participants had been registered nurses for 15 years or less, they averaged 5 to 7 hours of sleep a night, and felt moderately stressed. Of the nurses, 69 percent reported they had experienced burnout and 52.4 percent said they had left a position due to burnout. The variables that were significantly associated with burnout when assessed using chi-squares tests was years as a registered nurse ($p = .035$) and significantly associated with turnover was ethnicity ($p = .008$). **Discussion:** The findings suggested burnout was prevalent among registered nurses and burnout can lead to turnover. Nurses with less experience tended to deal with burnout at a more significant rate than those with more experience. African Americans nurses were more likely to terminate employment due to burnout than Caucasians. **Conclusion:** Addressing burnout is important to the overall well-being of registered nurses and will aid with the issue of nursing shortage.

Keywords – registered nurses, burnout, turnover, health care organizations

Harris Jamal

MPH, Environmental Health Science

Advisor: Franklin Leach III, PhD

Pharmaceuticals in the Environment: Sources, Impacts, Policy, and Research Needs

Purpose: Pharmaceutical contamination of water bodies can lead to potential ecological and human toxicity. Local databases are paramount as pharmaceutical contamination is specific to the health of the local population and to the removal efficiencies of the local waste water treatment plant (WWTP). The objective of this investigation is to utilize FTICR mass spectra to identify pharmaceutical substances, characterize the dissolved organic matter background from three key water bodies in Athens-Clarke County (ACC), and establish a better understanding of the chemical composition of these water sources as a baseline for further research. **Methods:** Two liters of water were collected for six weeks from each of three sampling sites: Brooklyn Creek, Tanyard Creek, and the N. Oconee River. The samples were vacuum filtered using a 0.45 um filter and subsequently concentrated through solid phase extraction (Waters Oasis). The extracted materials are then amenable for mass spectral analysis. **Results and Conclusion:** The results of this study would provide insights into the chemical composition of waters including potential pharmaceutical contaminants and the dissolved organic matter in ACC. The effects of the surrounding land-based activities would be evident in the mass spectra results. Brooklyn creek contains effluent from the local Piedmont Regional hospital and the Oconee River contains discharge from the local WWTP. Findings of pharmaceutical compounds in these sites may be useful in the creation of new initiatives to address the use of medications in healthcare and to better assess the functionality of the WWTP. The results could also give insight into prominent health conditions in Athens-Clarke County.

Nichelle Jasper, DVM

MPH, Epidemiology

Advisors: Justin Bahl, PhD and Brandy Burgess, DVM, PhD

Characteristics of Biosecurity and Infection Control Programs at Veterinary Teaching Hospitals.

Purpose: The American Veterinary Medical Association's (AVMA) accredited veterinary teaching hospital's (VTH) top priority is to educate students on infection control in a safe environment. Benedict (2008) characterized infection control programs (ICP) at VTHs and revealed variation among the programs and outbreaks of zoonotic and hospital-associated infections (HAIs) were hazards to hospital personnel. This study reassessed biosecurity and ICP at VTHs, compared results with the Benedict (2008) study and assessed the enteric infectious disease controls. **Methods:** A cross-sectional study was conducted from July 2015-August 2016 via telephone interviews with AVMA-accredited VTHs, which addressed policies for hygiene, surveillance, patient contact, education, and enteric infectious disease control. The study population was AVMA- accredited veterinary institutions that operate a veterinary teaching hospital and had been operational for at least one year. **Results:** Eighty-nine percent of participating VTHs had infection control committees (ICC) to oversee biosecurity activities, but only 53% required mandatory biosecurity training. Mainly veterinarians were the ICC chair at 94% of institutions. Sixty-three percent of participating institutions reported zoonotic infections with hospital personnel and outbreaks of HAIs. Cryptosporidium and Salmonella, spp. were responsible for most zoonotic infections. Most institutions conducted the same level of surveillance as in 2008, but identification of multidrug resistant microbes increased. **Interpretation:** An apparent continued disconnect exists in the veterinary profession with the development of ICPs and their implementation. Although the majority of institutions have ICCs, outbreaks still occurred. Veterinary biosecurity education is still not prioritized, which is not in alignment with AVMA accreditation. **Conclusion:** The strength of ICP in the veterinary profession directly affects public health because possible zoonotic HAIs can be transmitted to private homes.

Alexander Johnson

MPH, Health Promotion and Behavior

Advisor: Jessica Mulenburg, PhD

The Need for Theory-Based Interventions to Prevent Type-2 Diabetes Among American Indians and Alaska Natives: A Literature Review

Type 2 diabetes disproportionately affects American Indians and Alaska Natives (AI/AN) in the United States. Identifying social determinants that create barriers related to diet, exercise, and access to healthcare may help explain this health disparity. Behavior change theories could provide a useful framework to understand how social determinants affect the health of AI/AN and guide diabetes research and practice. **Purpose:** Examine the causes of diabetes and social determinants of diabetes among AI/AN and Identify common elements in effective theory-

based diabetes prevention and intervention strategies. **Methods:** Articles were selected through the University of Georgia's electronic library, PubMed, SAGE, ScienceDirect, and JSTOR using six sets of key words. Social Determinants of Health: AI/AN have lower income and educational levels, higher unemployment rates, and poorer quality of housing. They also are more likely to be food insecure and uninsured, less likely to have access to primary care, and overrepresented in federal and local prisons, compared to the nation as a whole. **Theory-based Interventions:** Seven out of 10 articles reviewed used theory. Out of those, a majority used social cognitive theory. Risk perception, self-efficacy, and dietary/exercise intentions were common measurement outcomes in this review. While theory-driven programs have been shown to be more effective in producing behavior change, there is a substantial lack of diabetes prevention research among AI/AN that uses theory. **Recommendations:** More theory-driven diabetes prevention research among AI/AN is needed. Future research should focus on the association of self-efficacy, risk perception, dietary/exercise intentions and social determinants of health among AI/AN.

Clarissa Keisling

MPH, Epidemiology

Advisor: Andrea Swartzendruber, PhD

Title: Micronutrient Deficiencies in Belizean Preschool-aged Children: Belize National Micronutrient Survey 2011

Background: Micronutrient deficiencies can have adverse effects on developing children and can impair motor, cognitive, and immune system development and functioning. We utilized data collected during the 2011 Belize national micronutrient survey (BNMS), a national probability-based survey conducted among Belizean children, to establish baseline prevalence of anemia, iron deficiency, vitamin A deficiency, vitamin B-12 deficiency and marginal deficiency, and folate deficiency among children 6 to 59 months of age. **Methods:** Blood samples were collected from 971 children for the determination of hemoglobin, ferritin (iron), retinol (vitamin A), vitamin B-12 (plasma), and folate (RBC and serum) concentrations. Sociodemographic and health information was also collected to identify risk factors associated with these micronutrient deficiencies. **Results:** Retinol and serum folate deficiencies were reportedly low (0.29% and 1.19%, respectively). However, our findings indicate that despite mandatory fortification of wheat flour, the national prevalence estimates for anemia (20.07%), RBC folate deficiency (35.02%), vitamin B-12 marginal deficiency (12.85%), and ferritin deficiency (7.67%) are still of public health concern in Belizean children. In particular, the high prevalence of anemia and RBC folate deficiency suggests an underlying ubiquity of poor childhood nutrition and health, with children residing in Southern and Western regions of Belize at a potentially higher risk for cognitive and physical developmental issues. **Conclusions:** These results provide an important baseline against which future survey results can be compared in the post-mandatory fortification period and will help guide intervention strategies to improve micronutrient status among this at-risk population.

Ciara Long

MPH, Health Promotion and Behavior

Advisor: Heather Padilla, PhD

Purpose: Diabetes mellitus is one of the leading causes of death in the United States. Diabetes can be managed with insulin, oral medication, diet, and exercise. St. Mary's offers a Diabetes Self-Management Education (DSME) program that teaches patients about the disease process, blood glucose monitoring, complications, weight control, behavior change, nutrition, and medications. This capstone project describes the participation, effectiveness, and satisfaction with the program. **Methods:** Self-reported data was collected through pre- and post-assessment surveys administered by the Education Specialist in 2018. Data was analyzed using Microsoft Excel and SPSS. Paired t-test were used to test for changes over time between pre- and post-assessments. **Results:** Participants were predominantly female (67%), Caucasian (70%), and had type II diabetes (69%). Approximately 79% of participants reported a decrease in their A1c. A1C decreased by 1.4%, on average. Approximately 54% of participants reported a decrease in weight. Approximately 39% of participants reported increased monitoring of blood glucose, and 50% reported increased time exercising. Exercise increased by 31 minutes per week. All participants surveyed believed the program taught them new skills to better care for their diabetes and would recommend this class to others. **Conclusion:** The St. Mary's DSME program improved the health of participants through reductions in weight and A1C, and increases in exercise and glucose monitoring. Data was limited by self-report and varied timeframes for follow-up. Future program evaluation would benefit from consistent follow-up timeframes, and additional information on participation in program components.

Annie Ndolo

MPH, Epidemiology

Advisor: Toni Miles, MD, PhD

Providing On-Site Continuing Education to Georgia Long-Term Care Facility Direct Care Workers and Assessing Post-Training Attitude Change: A Feasibility Study

Objectives: Direct care workers in U.S. long-term care facilities tend to lack training in proper end-of-life care. This project sought to assess the feasibility of delivering on-site continuing education (CE) training centered on bereavement care to this population. We also assessed changes in training attendees' pre- to post-training endorsement of the Best Practices in Bereavement Care presented. **Methods:** Through phone call correspondence with Directors of Nursing in the Athens-Clarke County hospital system, we successfully recruited four nursing homes at which to deliver our training. The training, called Best Practices in Bereavement Care, concerned end-of-life care practices that ease the grieving process and promote better health. Direct care staff at the four facilities were given pre- and post-training surveys assessing their level of agreement with the presentation's content. These data were collected and analyzed to confirm whether or not a positive change occurred in the attendees' agreement. **Results:** All four facilities' survey respondents saw an increase in average endorsement of the

presentation's content, but the results were not statistically significant due to the small sample size of only four facilities. **Interpretation:** There was great demand for our training in particular amongst the nursing homes within our sampling frame. It is imperative that future efforts for such projects be flexible and ready to adjust to unforeseen hurdles (i.e. inclement weather, global pandemics, etc.). **Conclusion:** It is indeed possible to provide CE training on a large scale, statewide basis.

Keywords: direct care, continuing education, feasibility

Girija Mulay

MPH, Environmental Health Science

Advisor: Anne Marie Zimeri, PhD

Sources of biological adulteration with E. Coli in food production and its effects on human health.

Purpose: Identify sources of biological adulteration which lead to contamination of food products with E. coli and how it affects human health **Background:** Most foodborne illnesses are caused by biological contamination when microorganisms such as bacteria, viruses, and parasites enter the food. Prevalence and outbreak of these diseases causing foodborne pathogens to contribute towards global mortality rates and severe economic losses for the food industry according to the CDC, 1 in 6 Americans i.e. 48 million people become ill from foodborne pathogens, 128,000 are hospitalized and around 3000 die of foodborne diseases each year. Contaminated ground beef is the most common vehicle for E. coli O157: H7 outbreaks. Beef products may additionally end up contaminated during slaughter, and the technique of grinding beef may additionally transfer pathogens from the floor of the meat to the interior. The meat and poultry industries are the largest segments of U.S. agriculture. **Data Analysis:** E.coli O157 (STEC) is the causative agent for 36% of the estimated 265,000 STEC infections reported each year in the United States. According to CDC data, the outbreaks associated with foodborne illnesses due to E.coli are categorized according to the group of strain, the product it was found in, and is analyzed using the reported cases, hospitalizations, and deaths were analyzed. The maximum association of E.coli was linked to beef. **Conclusion:** Beef is the United States' largest industry and the source of transmission of E.coli is mainly through cattle-based products. It is important to study the data and assess the risk. Considering food safety and foodborne illness as a public health issue one of the many efforts in undertaking risk assessment is the health impact of E.coli.

Lauren Nichols

MPH, Health Promotion and Behavior

Advisor: Jennifer Gay, PhD

Availability and effectiveness of health promotion and services on college campuses: a scoping review

Purpose: The health promotion and program needs of college students are constantly growing as enrollment and student health risks increase. The purpose of this scoping review was to seek and determine what health programs are available to college students and how effective they are. Specifically, the research question was: What health promotion programs/services are available on college campuses throughout the United States? **Methods:** To collect articles for review, keywords were searched through Galileo UGA Libraries and Google Scholar. Articles were sorted and excluded if they did not evaluate a health program or promotional service. Program evaluations were then rated based on 3 criteria: (1) directness of evidence, (2) relevance of program to health of students, and (3) overall effectiveness for determining what programs are most beneficial. **Results:** Of the 52 articles collected, 10 studies were included. The review revealed that the most successful programs were interactive or “hands-on” with peer engagement and clear educational presentations that considered environmental factors and social norms. **Conclusion:** Suggested adjustments and moderations to programs include the application of the six dimensions of wellness to account for the interconnectedness of all areas of health, adherence to ACHA standards, collaboration with other professionals on campus, and consideration of internal and external factors of the diverse college population. Identification of the specific needs of students on each campus through the ACHA National College Health Assessment with additional program evaluation can aid in the development and successful implementation of health programs that will engage students and promote long-lasting, healthy lifestyles.

Ezimme Nnyagu

PharmD/MPH, Health Policy and Management

Advisor: Lesley Clack, ScD

Measuring Quality: Evaluating Hospital Value-Based Purchasing and Overall Hospital Ratings

Purpose: Identify potential relationships between FY 2016 hospital overall ratings and HVBP adjustments of four U.S. regions: Georgia, Pennsylvania, Ohio, and Washington State, and evaluate the change in HVBP adjustment during FY 2014 – FY 2017 and hospital overall ratings from in each state. **Methods:** Data from the Modern Healthcare Hospital Penalties and Rewards dataset was used to identify potential relationships in HVBP adjustments and hospital overall ratings between states representing four U.S. regions and evaluate changes in HVBP adjustments and hospital overall ratings from FY 2014 – FY 2017. **Results:** FY 2014 mean HVBP adjustments between Ohio and Washington differed significantly with a mean difference of

0.10% ($p = 0.003$; 95% CI: 0.03% – 0.18%) and Pennsylvania and Washington 0.08% ($p = 0.024$; 95% CI: 0.01% – 0.16%). FY 2016 mean hospital overall ratings differed significantly between Georgia and Ohio with mean a difference of 0.58 ($p = 0.002$; 95% CI: 0.17 – 1.00) and Ohio and Washington 0.65 ($p = 0.002$; 95% CI: 0.18 – 1.12). **Discussion:** During the HVBP program's inaugural year, hospitals in Ohio and Pennsylvania may have been better suited to overcome challenges associated with acclimating to the new value-based standards compares to Washington. **Conclusions:** These observations reveal significant differences in FY 2014 HVBP adjustments and FY 2016 hospital overall ratings between geographic regions.

Keywords: Hospital value-based purchasing, quality, value, Medicare, patient satisfaction, hospital rating

Madison Olds

MPH, Disaster Management

Advisor: Curtis Harris, PhD

Mental health in first responders: a review and recommendations for prevention and intervention strategies

Purpose: The mental health of first responders is often overlooked and vastly understudied. If the mental and emotional health of first responders following traumatic incidents or disasters is neglected, there will be significant harms on both the community and first responders themselves. **Methods:** I did a literature review of Google Scholar and PubMed concerning the mental health of first responders following mass-casualty events. **Results:** Multiple studies concluded that around 30% of first responders will have a mental health disorder such as PTSD, depression, or substance abuse disorder in their lifetime, compared with only 20% of the general population. Around 75% of those first responders will not seek help. **Conclusion:** This lack of treatment results from workplace stigma, barriers to access, and a limited amount of mental health professionals, especially following major events. There are interventions that can be put in place: programs such as Psychological First Aid, Critical Incident Stress Management, and overall changes in workplace culture that supports mental health. **Interpretation:** It's important to be aware of the mental health crisis our first responders are facing, and to apply the outlined interventions into disaster response plans and incorporate them into first responder culture. This will ensure proper and healthy response to future traumatic incidents while taking care of the responders on the frontlines.

Emily Reeves

MPH, Epidemiology

Advisor: Andrea Swartzendruber, PhD

Purpose: Access to preferred method of contraception is an important aspect to reducing unintended pregnancy. The objective of this study was to evaluate the extent to which financial barriers influence family planning method of choice. **Methods:** This retrospective analysis investigated the association between providing no-cost family planning methods and

contraceptive choice in self-pay patients at specific family planning clinic in Atlanta, Georgia. This study utilized clinical data from 3,326 patients during 2018 and 2019. **Results:** Analyses showed statistically significant differences in method choice comparing time periods when the grant was and was not in place. When the grant was available, 20.6% of patients chose Tier 1 methods (most effective), 63.2% chose Tier 2 methods (moderately effective), and 16.2% chose Tier 3 methods (least effective). When the grant was unavailable, Tier 1 methods lowered by 11.9%; Tier 2 methods lowered by 0.5%; and Tier 3 methods rose by 12.4%. The logistic regression model for Tier 1 family planning methods showed that patients during grant availability were more likely to choose Tier 1 methods compared to when the grant was unavailable. It also showed that black participants were less likely to choose Tier 1 methods compared to their white counterparts. **Conclusion and interpretation:** The results of this analysis suggest that without financial constraints patients tend to choose to use more effective methods of contraception. There is a continuous need for no-cost family planning services to provide self-pay patients with their preferred method of contraception. This analysis also emphasizes the importance of a patient-centered approach to contraceptive method selection.

Thomas Richey

MPH, Disaster Management
Advisor: Curtis Harris, PhD

A review of emergency medical services vulnerabilities to highly infectious disease

Purpose: Emergency medical services (EMS) responders are a group of medically skilled professionals who perform a wide range of essential medical services within a community including emergency response, patient transport, and mobile integrated healthcare. The proper functioning of the EMS system is paramount to the wellbeing of the medical system and public health. This paper's function is to review the current EMS system and determine the danger a highly infectious disease (HID) may pose to these healthcare workers and the community.

Methods: Areas of vulnerability within current EMS systems were identified and a literature review was conducted. **Results:** Literary research displayed areas of vulnerability within EMS systems, including a lack of standardized training and education along with providers' inconsistent capability to correctly implement standard precautions. **Discussion:** The lack of standardized training and educational standards make EMS systems extremely vulnerable to HIDs. These vulnerabilities must be addressed to protect EMS providers and enhance the resilience of the US healthcare system. Efforts to improve the EMS curriculum and increase minimum levels of education for first responders may be necessary to successfully insulate the EMS profession from some of the dangers of HIDs.

Grace Smith

MPH, Epidemiology

Advisor: Changwei Li, PhD

The Effects of Childhood Financial Stress on Adult Chronic Disease

Purpose: There is a robust and growing body of evidence that suggests childhood financial stress is a strong predictor of adult chronic disease. We examined this association between childhood financial stress and four chronic conditions: diabetes, heart disease, hypertension, and psychiatric disorders. **Methods:** Using the 2016 dataset of The University of Michigan Health and Retirement Study, we used traditional logistic regression to model the effects of childhood financial stress on these four outcomes, while controlling for age, gender, race, alcohol use, smoking, child substance abuse, and adult socioeconomic status. **Results:** We found that 46% of our sample (2012/4343) was exposed to childhood financial stress, as measured by self-rated childhood financial status, receiving financial help from non-nuclear family relatives, having to relocate housing due to financial stress, and paternal unemployment of a period greater than one year, all occurring before age 16. Participants reporting exposure to any form of childhood financial stress faced a greater odds of developing adult-onset diabetes (OR =1.36,) heart disease (OR=1.74,) hypertension (OR=1.19,) and psychiatric disorders (OR=1.40.) Further, participants who reported multiple exposures increased their odds of developing diabetes (OR=1.14,) heart disease (OR=1.24,) hypertension (OR=1.09,) and psychiatric disorders (OR=1.20) with each additional exposure. **Conclusion:** These results demonstrate that, among Americans, childhood financial stress may play a role in developing a chronic disease in adulthood, independent of adult socioeconomic status. Given the high rates of childhood poverty and chronic disease in The United States, advocating for policies that prioritize child poverty reduction and social wellbeing may contribute towards a much-needed decrease in chronic disease incidence for the next generation.

Chandler Surrell

MPH, Epidemiology

Advisor: Andrea Swartzendruber, PhD

Effectiveness of Respondent-Driven Survey Methods at Reaching Transgender Women Populations in Relation to the National HIV Behavioral Surveillance Program

Objectives: To evaluate the effectiveness of recruiting transgender women (TW) into the National HIV Behavioral Surveillance (NHBS) program via Respondent-Driven Survey (RDS) methods throughout Atlanta and other major metropolitan cities. **Methods:** Formative analysis was completed for several years prior to the survey administration. We conducted surveys at multiple sites throughout the city of Atlanta and compared our survey turnout to those conducted in other cities. Participants were recruited through the RDS methodology and surveys were conducted from August 2019 to February 2020. **Results:** Total number of participants screened ended with 148, well below the NHBS target of 200. Those screened were

heavily skewed to one demographic, as well as more often than not had an HIV positive test result. All but one seed proved to be ineffective and other cities tended to have better results as their methods of sampling were different than the city of Atlanta. **Conclusion:** RDS is a method of recruiting that both historically and presently has been shown to have success in sampling hidden populations. However, in our study, it seemed that RDS may not have been as effective as we were hoping at recruiting TW into our study. It is imperative to the future health of Atlanta and other metropolitan cities alike that researchers find a way to make recruiting TW more successful in studies. This may ultimately come to fruition through implementing multiple recruitment strategies at once, especially ones that include social media outreach, as well as taking time to learn more about the TW community to better understand where their distrust for research comes from and what we can do as public health workers to make them feel more welcome and more inclined to participate.

Trenaye Youngblood

MPH, Gerontology

Advisor: Kerstin Emerson, PhD

“We Don’t Talk About Things Like That”: A Culturally Responsive Sexual Health Intervention Program for Older Women of Color

Purpose: Although young adults between the ages of 15 and 24 remain the population with the highest rates of infection, the rates of infection in older adults have been steadily increasing. Older women of color are disproportionately affected by sexually transmitted diseases. There are many barriers that contribute to this such as societal attitudes toward their sexuality, access to sexual health care providers, and other socio-environmental factors. Older WOC deserve the opportunity to make educated decisions about their sexual behaviors in order to improve their quality of life and well-being. Unfortunately, they remain ignored when intervention programs are being implemented, and there is little evidence-based research on their sexual health behaviors. **Methods:** A review of published, peer-reviewed literature dated between 2008 and 2019 was conducted. Of the 78 potential articles, 18 met the criteria to be included in this capstone. **Results:** The literature reviewed confirmed that group based, multi session, theory-based interventions that were delivered face-to-face are the most effective at reducing STI/HIV risk behaviors for WOC. Furthermore, the literature review demonstrates that there is a clear need for interventions tailored toward older WOC. Of the 18 interventions found, only one focused on older adults and it was not specific to women or people of color. Based off of these findings, an eight-day sexual health behavioral intervention program for older WOC was created. **Conclusion:** STI rates continue to rise; in order to halt the rising rates of STIs in older WOC, research for this population should be conducted and published more frequently.