

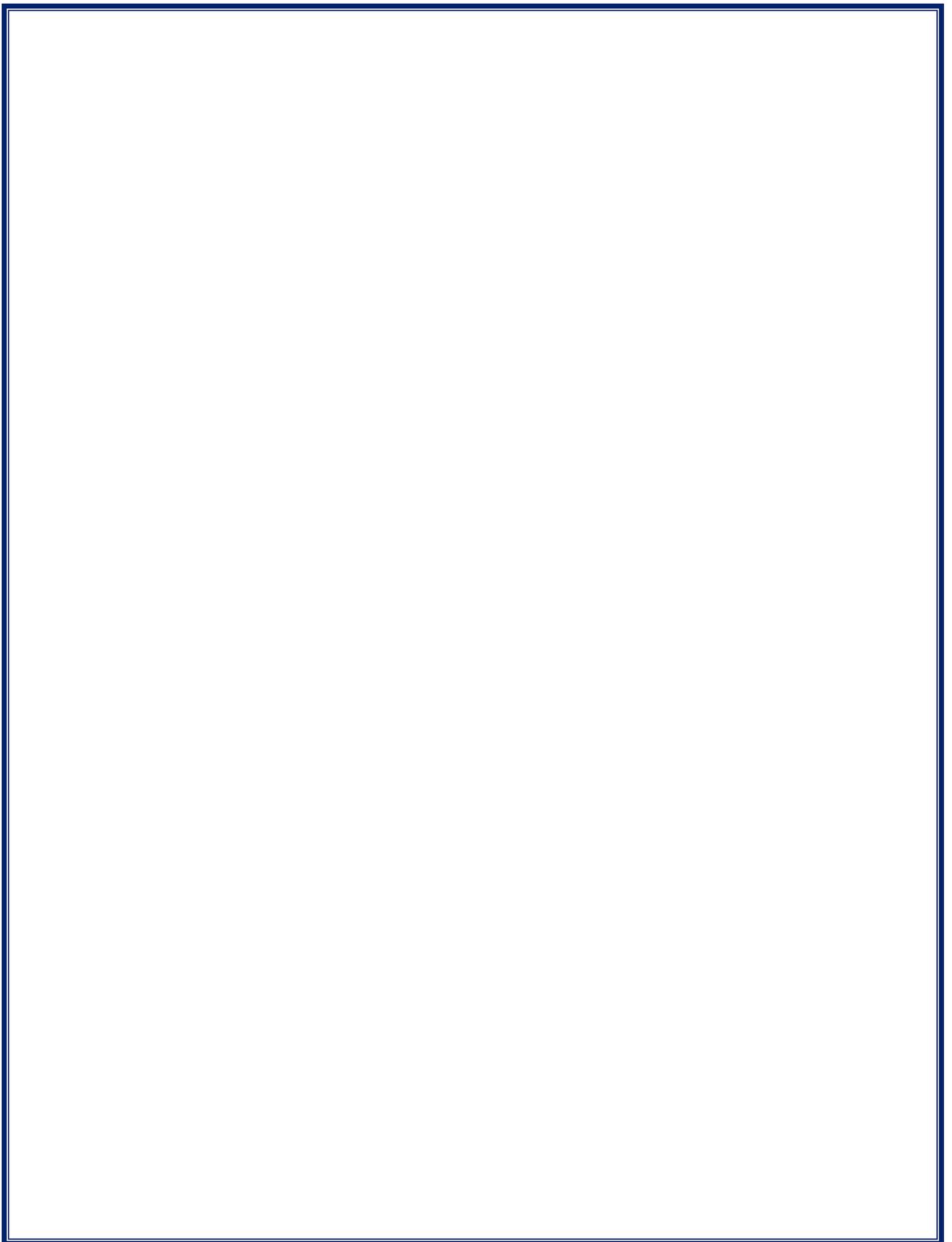
Master of Public Health Program

Perelman School of Medicine
University of Pennsylvania



Capstone Presentation Program

Fall 2019



Thursday, December 12, 2019

Biomedical Research Building II/III, Room 1412

9:40 am

Mamarawit Abera

Mentor: Risa J. Lavizzo-Mourey, MD, MBA

“Maternal Devices:” Evaluating the quality of pregnancy-related mobile health apps

Abstract:

With over 300,000 health related mobile applications available to consumers, pregnancy-related apps far outnumber other health topics. Studies indicate that 79% of women in the United States own a smartphone and utilize health apps more than men. Pregnant women are increasingly turning to mobile applications to fill gaps in prenatal care. Despite the rapid growth of pregnancy mobile health apps and their potential to close gaps in cost and access, the accuracy of the information contained within them is not regulated, which could further compromise maternal health outcomes. In this study, we aim to evaluate the quality of health information found within pregnancy-related mobile applications using the Mobile App Rating Scale (MARS). Thus, we conducted a systematic search of the official Android and iOS app marketplace to generate a complete list of pregnancy apps. Eligible apps were free, in English, and related to the health outcomes of pregnant women. To pilot this rating procedure, ten apps were included in the preliminary analysis. We collected descriptive statistics and utilized MARS to rate the engagement, functionality, aesthetics, and quality of information of the apps. The results of this pilot will highlight the utility of this method in evaluating the quality of pregnancy apps. Later, after analyzing all of the eligible apps, the results will highlight opportunities and risks associated with their quality and potential impact. This will help us develop recommendations for better regulating pregnancy mobile health applications, with the downstream effects of protecting and improving maternal health outcomes.

Maramawit Abera graduated from the University of Pennsylvania in 2018 with a major in Health and Societies and a minor in Africana Studies and will be graduating from the University of Pennsylvania MPH program in 2020. She is currently a Research Coordinator at the Penn Memory Center as part of The Penn Program on Precision Medicine for the Brain. After graduation, Mara plans to pursue law school.

10:00 am

Angeliz Caro Monroig

Mentor: Dorene F. Balmer, PhD

**Expanding our understanding about entrustment decision-making:
The medical student perspective**

A growing number of medical schools today are moving away from the granular assessment of individual competencies and toward the assessment of the ability to execute holistic, entrustable professional activities (EPAs). The literature about how entrustment decisions in the clinical workplace are made - mostly based on supervisor perspectives and outside of an entrustment assessment framework - identifies five broad factors (trainee, supervisor, trainee-supervisor relationship, context, and task), each with a variety of components. The purpose of our study was to explore medical trainees' perspectives on how supervisors make entrustment decisions in the workplace in order to expand our understanding of this literature with student-as-trainee perspective. We conducted a supplemental analysis of qualitative data from a pilot program using an EPA assessment framework to advance trainees through their curriculum. From 2015-2018, biannual focus groups were conducted with 27 students who shared their experience with formative assessment in the program. Sensitized by the entrustment literature, eight transcripts were coded and inductively analyzed. Students identified the five factors reported in the literature. However, they expanded trainee and trainee-supervisor relationship factors by describing how the longitudinal nature of their relationship fostered trust and constructive, bi-directional feedback. In addition, they described how, in these relationships, they directed their own learning and activated discernment to recalibrate supervisors' assessments.

Angeliz Caro Monroig graduated from the University of Puerto Rico in 2014 with a bachelor's degree in chemistry and will be graduating from the University of Pennsylvania's Perelman School of Medicine with a Medical Degree (MD) and a Master of Public Health (MPH) in 2020. She is currently applying to Pediatrics residency programs and hopes to work on advocacy and research focused on health disparities during residency training and beyond.

10:20 am

Christine Willinger

Mentor: Ryan Greysen, MD, MHS, MA, FHM

Rest for the weary: Exploring the role of sleep in post-hospital recovery

Abstract:

Sleep is essential for health, and population-based studies show robust associations of poor sleep with morbidity and mortality. Much of what we know about sleep in the hospital comes from critical care settings: such patients experience altered sleep architecture and persistent disturbances for up to one year after discharge. However, data on sleep in general medical patients is limited. In addition to small sample sizes, studies of sleep and hospitalization have focused exclusively on the hospital period, precluding the exploration of trends in sleep over time or associations with post-hospital recovery. We hypothesized that hospitalized patients experience poor sleep quantity and quality that persist after discharge and are associated with decreased physical function. To test this hypothesis, we collected survey-reported measures of sleep and physical function in 232 patients from admission to three months after discharge to home. Sleep was measured by the Pittsburgh Sleep Quality Index and physical function by the Katz Activities of Daily Living, Brody Instrumental Activities of Daily Living, and Nagi mobility scales. Sleep quality and quantity, instrumental activities of daily living, and mobility significantly decreased from patients' pre-hospital baseline to during hospitalization and up to 3 months post-discharge. In multivariable models, patient-reported sleep predicted a significant proportion of change in mobility over the study period. These data demonstrate that poor sleep is an enduring side effect of hospitalization that may impair recovery of physical function; further studies are needed to test the causal nature of this association and the relationship between sleep and hospital readmissions.

Christine Willinger graduated from Yale University with a degree in Molecular Biochemistry & Biophysics and spent two years conducting epidemiology research in cardiovascular disease at the Framingham Heart Study before matriculating at the University of Pennsylvania for medical school. She is applying to Internal Medicine for residency and aspires to be an outpatient doctor for older adults with multiple chronic conditions. She has enjoyed studying patient-centered outcomes through the MPH program and looks forward to combining this research with clinical practice with the goal of systematically improving outcomes that matter to the communities she serves.

10:40 am

Mohima Sanyal

Mentor: Meredith Matone, DrPH, MHS

A story is worth a thousand prescriptions: Designing a narrative approach to improve provider adoption of clinical guidelines

Abstract:

Physicians struggle to effectively incorporate evidence-based guidelines into clinical practice. Still, there has been little investment in developing and testing alternative means for guideline dissemination. However, narratives are established tools for behavior change. Provider-focused narrative interventions are an inexpensive, sustainable method to distribute evidence from academic medicine to practitioners and policymakers. The evidence base supporting the use of narratives to inform clinical practice is growing, while best practices for narrative development and implementation have yet to be confirmed. In 2016, this research team developed an evidence-based narrative approach to impact physicians' pediatric second-generation antipsychotic prescribing practices. Beginning with semi-structured interviews to elicit personal narratives from pediatricians, child psychiatrists, and family medicine practitioners across Pennsylvania, data were adapted by applying the transportation-imagery theory and elaboration likelihood model to create engaging, realistic stories to enhance retention and adoption of evidence-based guidelines. Narratives were refined through iterative feedback from physician focus groups and narrative theory experts. The authors learned from key stakeholders about the most persuasive narrative style, format, and content to maximize physician engagement. Specialists from the target specialties were most engaged by first-person physician narratives that integrate elements of a short case-study. Stakeholders valued clinical accuracy, brevity, and concrete resolutions that incorporate evidence-based guidelines. The narrative development approach described in this study contributed to a statewide randomized-control trial comparing the use of narrative-enhanced recommendations to didactic recommendations alone in impacting physician adoption of evidence-based guidelines. The findings described represent methods to create expert-panel informed narratives using a multi-step qualitative design.

Mohima Sanyal, MSc was a 1693 Scholar at the College of William & Mary where she graduated with a BA in Cognitive Science in 2014. She earned her MSc in Cognitive and Evolutionary Anthropology with Distinction at the University of Oxford in 2015. She is currently a MD-MPH candidate at the Perelman School of Medicine, and she plans to apply her interdisciplinary background as an ophthalmologist and advocate in order to best serve both local and global communities.

11:20 am

Jason Sloan

Mentor: Evan Anderson, JD, PhD

Regulating an epidemic: The legality of directly-observed therapy for pain

Abstract:

The United States is experiencing a syndemic of opioid-related harms. The rate of fatal overdoses has tripled since 1999 and incidence of injection-related infections is rapidly rising. There have been successes and failures in prevention measures deployed to date. Broadening access to naloxone and Opioid Agonist Therapy (OAT) has reduced opioid-related harms. Legal barriers have stymied adoption of additional evidence-based measures like Safe Consumption Facilities and Injectable Opioid Agonist Therapy (iOAT). These neglected tools reflect a more complete appreciation for the root causes of the crisis, which, at its core, is a crisis of undertreated physical, emotional, and economic pain. The structural drivers of this crisis include factors outside of the healthcare system like financial stress, isolation, and occupational injury, as well as factors within the healthcare system like financing that privileges surgical countermeasures and skimps on preventative care. This project focuses on the nexus between pain treatment, addiction, and overdose. It argues that more proactive measures to control pain among people at high overdose risk are an important but overlooked strategy for reducing opioid-related harms. We propose providing this health service within a well-recognized healthcare construct: Directly-Observed Therapy (DOT). Such a model, which we call Directly-Observed Therapy for Pain (DOT-P), would resemble a specialty intensive pain care clinic where clinicians provide pharmaceutical-grade opioids along with key wraparound services. It would address concerns with polypharmacy, diversion, and overdose. Though DOT-P is not currently available in the United States, we describe a reasonable legal roadmap for operationalizing such an approach.

Jason Sloan graduated from the Macaulay Honors College at CUNY Hunter College in 2015 and will be graduating from the University of Pennsylvania Law School and Perelman School of Medicine with JD and MPH degrees in 2020. While studying at Penn, Jason has worked at the U.S. Department of Health and Human Services, the Philadelphia District Attorney's Office, and as a research assistant for Evan Anderson. After graduation, Jason will begin his career as an attorney at Hogan Lovells in New York City.

11:40 am

Carmelle Tsai, MD

Mentors: Nadia Dowshen, MD; Nancy Kassam-Adams, PhD; and Cynthia Mollen, MD, MSCE

Screening for trafficking in the ED: Perspectives from trafficked youth utilizing a video-elicitation method

Abstract:

Research has shown that trafficked youth present to the emergency department (ED) during their time of exploitation. While several screening questionnaires have been developed to help identify potential victims, little is known about how trafficked youth themselves prefer to be approached by ED providers about this sensitive topic. The objective of this study was to explore the perspectives of trafficked youth on how ED providers should ask them about their trafficking history. We conducted in-depth, semi-structured interviews with twenty youth ages 18 to 21 who were trafficked as minors. The interviews included a novel video-elicitation method to prompt feedback from the ED patient perspective. The following themes were identified. 1) Barriers to disclosure: participants experience fear, including: fear of the unknown, social and legal implications, and retaliation. They also desire reassurance of safety. 2) Approaching the subject of trafficking in the ED: participants desire a direct, sensitive, and confidential approach and do not express concerns about being asked. They prefer a medical provider to ask, and a choice in the gender of their provider. 3) ED environment: participants desire a choice and autonomy when possible. They also provide concrete suggestions for helping survivors feel safe. 4) Adjunct methods of screening: Most participants consider screening placards or computer surveys useful adjuncts but not replacements for the provider-patient conversation. These findings provide practical guidance for ED providers and can inform the implementation of existing screening protocols.

Dr. Carmelle Tsai is a pediatric emergency medicine and global health fellow at Children's Hospital of Philadelphia. Her global and local research interests are in how medical providers can assist and advocate for exploited and abused children in vulnerable settings.

12:00 pm

Gina Chang

Mentors: Jennifer McGuire, MD, MSCE and Mercedes Blackstone, MD

Does race matter?

Exploring febrile seizure management in the pediatric emergency department

Abstract:

Race/ethnicity-based differences in pediatric emergency department (ED) care unfortunately occur across a variety of disorders. We aimed to determine if such differences exist in the ED management of febrile seizures, a common neurologic disorder, in a large pediatric tertiary care center. We performed a retrospective, cross-sectional analysis of children 0.5-5.0 years-old who presented to the ED at Children's Hospital of Philadelphia between 6/1/14 and 5/31/18. Eligible children were identified by electronic medical record query for ICD-10 discharge codes for febrile seizure, or fever and seizure. Cases were confirmed and data were abstracted by chart review. Multivariate logistic regression models were built to examine the association of race (black vs non-black) with outcomes of: a) neuroimaging obtained in the ED; b) anticonvulsant therapy prescription at ED discharge; and c) hospital admission. Of the 980 ED visits during the study period, 60% were from black children. Overall, 4% (n=38) of children underwent neuroimaging, 11% (n=109) were admitted, and 10% of the remaining children (n=84/871) discharged home from the ED were prescribed an anticonvulsant. Multivariate logistic regression models demonstrated that black children were less likely to be prescribed anticonvulsants at discharge (aOR 0.46, 95% CI 0.22-0.96), when adjusting for demographic and clinical confounders. No significant race-based disparities were identified in use of neuroimaging or hospital admission. Why race-based disparities exist in ED prescription of anticonvulsant therapy for children with febrile seizures, but not in other aspects of ED management remains unknown. A better understanding of these differences may provide valuable insight into why disparities occur across a variety of disorders.

Gina Chang is a dual-degree MD/MPH candidate graduating in May 2020. She received her BA in Neuroscience from Washington University in St. Louis in 2015 and plans to continue her medical training in Child Neurology residency. She hopes to complement her future clinical practice with public health research and intervention development in the fields of health care disparities and adverse childhood experiences.

12:20 pm

Brinda Ramesh

Mentors: Justin Clapp, PhD, MPH and Marian Reiff, PhD, MSc

**Suicide prevention training at the University of Pennsylvania:
Facilitators and barriers to trainee intervention**

Abstract:

Suicide remains a leading cause of death among individuals in college, and rates of suicidal ideation and suicide attempts have been increasing among this population. Research suggests that environmental stressors and the vulnerable age of students contribute to an increased risk for suicide. Suicide prevention trainings have been shown to be effective at equipping trainees with the knowledge and tools necessary to intervene with peers and students they suspect are in distress or crisis. However, few studies have examined trainees' behaviors after they have been trained and after having interactions with individuals who may be in distress or crisis. This research analyzed follow-up survey data from faculty, students, and staff who were trained in I CARE, Penn's suicide prevention training. The training consisted of an online module, an in-person training, a post-assessment, and a follow-up survey. The follow-up survey data consisted of six open-ended questions, which asked participants about what factors served as barriers to intervention as well as what helped participants to intervene. Data were coded in NVivo using a codebook that was iteratively developed with a research partner. A thematic analysis revealed a variety of facilitators and barriers that trainees experienced. Facilitators included social and institutional networks of support; barriers included discomfort with asking others about suicide and self-doubt. Further research on how to better support trainees is needed.

Brinda Ramesh completed her BA in Health and Societies in 2018 at the University of Pennsylvania where she is now a candidate for her Master of Public Health. Currently, she is a clinical research coordinator at Penn's Center for Mental Health working on a project aiming to improve support for children with autism. After graduating from the MPH program, Brinda is interested in learning more about healthcare law and policy.

1:20 pm

Christina Piroso, MSN, RN, CPN

Mentors: Stacey Kallem, MD, MSHP; Evan Anderson, JD, PhD; and Julia Reeves

Latching onto workplace lactation support in Philadelphia: A policy analysis

Abstract:

Breast milk and breastfeeding have been proven to prevent many health issues for infants and mothers. A large body of evidence shows that breastfeeding prevents morbidity, mortality, and even improves the economy. It is recommended to provide an infant only breast milk for at least the first six months of life. However, many women stop breastfeeding within in the first three months, a majority citing return to work as cause for cessation due to lack of support. One of the most powerful methods of increasing breastfeeding while working is legislation, creating policies to ensure employer compliance with federal regulations for workplace lactation support and reasonable accommodation. Philadelphia was one of the first cities to create policies supporting breastfeeding workers, including an Executive Order for city employees, followed by a city-wide ordinance. Despite these achievements, there is still a large decline in breastfeeding after returning to work in Philadelphia because not all employers comply with supportive legislation, and employees fear retaliation from reporting. Therefore, we completed a policy analysis on the Philadelphia Reasonable Accommodation Ordinance. We identified policies from four other US cities, as well as relevant US municipal and state legislation, to identify opportunities for policy improvement. Conversations with key Philadelphia stakeholders and a review of the current evidence highlighted additional policy gaps. The information was compiled into a report to be provided to PDPH and the Breastfeeding Task Force. We hope these policy improvement recommendations will be utilized by the City of Philadelphia to improve breastfeeding support and outcomes in our city.

Christina Piroso, MSN, RN, CPN graduated from the BSN Program at Drexel University in 2015 and is a dual degree student at the University of Pennsylvania. She completed her MSN in Health Leadership in summer 2019 and anticipates graduating with her MPH in winter 2019. She is currently a Nursing Professional Development Specialist at CHOP, with a focus on ambulatory and primary care nursing. After graduation, Christina plans to continue working with her internship site, the Philadelphia Department of Public Health, and pediatric primary care at CHOP to improve Philadelphia breastfeeding outcomes.

1:40 pm

Xochitl Luna Marti

Mentor: Carolyn Cannuscio, ScD

The impact of food allergy on adolescents' social experiences: A mixed methods analysis

Abstract:

Over five million U.S. children have severe food allergies, with prevalence increasing in recent years. Adolescents are the age group at highest risk of having a fatal reaction, so identifying strategies to reduce risk among adolescents is imperative. In order to safely manage a food allergy, adolescents must consistently engage in a range of preventive behaviors, from reading food labels to carrying life-saving epinephrine. Research has shown that adolescents with food allergies are more likely than their peers to experience a range of adverse psychosocial outcomes, such as anxiety and depression. What is not well understood are the specific ways that adolescents manage their allergy and the additional support they need to do so. We surveyed 131 adolescents aged 15 to 19 years old with a physician-diagnosed food allergy. The survey response rate was 86%. Analyses were conducted with the quantitative (closed-ended) and qualitative (open-ended) data. The analysis identified distinct social challenges: eating at school, explaining their food allergy to others, eating out, and traveling. These data point to unmet needs as well as opportunities to intervene in support of adolescents with food allergies, including leveraging teacher and peer support at schools; stocking epinephrine by default in schools, restaurants, and transit hubs; and improving policies and practices in the food and travel industries. In addition to policy change and practical support for adolescents with food allergies, social and psychological support may be necessary to improve self-efficacy for food allergy management.

Xochitl Luna Marti received a BA in Health and Societies at the University of Pennsylvania and submatriculated into the MPH program in the spring of 2018. She is a student part-time and works full-time as a Research Coordinator in the Center for Public Health Initiatives. After she graduates, she will continue to work in public health research at Penn.

2:00 pm

Carolyn La Rochelle

Mentors: Douglas J. Wiebe, PhD; Vicky Tam, MA; and Theresa Soya, MPH

Scoring surroundings: A criminologist photo assessment tool for assault

Abstract:

Physical assaults cause significant harm to both individuals and communities. Studies of crime have traditionally focused on social and developmental variables, but in recent decades, criminologists have increasingly defined criminal acts as sudden-onset events that are highly specific in time and space. Innovative spatial analyses in public health have identified features of the built environment that may contribute to assaults, but these studies have largely been limited to existing datasets and satellite imagery. This project proposed a novel methodology to measure features of the physical environment in meticulous detail using photographs. A literature review was conducted to identify key constructs from criminological theory and to determine what existing assessments might inform the project. Two scoring mechanisms were then developed, and freely available photographs from Google Street View were incorporated into a training manual. This tool may help researchers conduct detailed place-based analyses without the need for time-consuming and costly site visits. Findings may help identify which features of the built environment most strongly contribute to crime, informing which policy, design, and prevention interventions are most likely to reduce violence.

Caroline La Rochelle completed her BA in English from Allegheny College and a post-baccalaureate premedical program at Pennsylvania State University. Caroline is a full-time strategist at PolicyLab at the Children's Hospital of Philadelphia; she previously worked at the University of Pennsylvania Prevention Research Center and the Philadelphia Mayor's Office of Education, with extensive experience in community engagement. Her goal is to bridge the divide between research and public health practice by supporting policy initiatives, program evaluation, and translation of research findings to the public.

2:20 pm

Mary Kemper, MSW

Mentors: Hansie Mathelier, MD, FACC and Dominique Ruggieri, PhD

Call me, maybe? Impact of post-hospital discharge phone calls on 30 day readmission

Abstract:

The introduction of financially punitive measures by the Centers for Medicare and Medicaid, which have been duplicated by many national insurance carriers, has created a drive to reduce hospital readmissions, particularly for patients who carry a heart failure diagnosis. The purpose of this project was to determine whether completing a post hospital phone call impacts readmission for patients with heart failure and/or if other factors, such as social determinants of health, may be influencing this metric. In order to determine the causes for hospital readmission, we created a patient dataset through chart review that included variables that could potentially influence hospital readmission. We then compared the common variables among those patients who were readmitted to determine trends. Results revealed that social determinants of health play the largest role in frequent visits to the hospital; post discharge phone calls have little effect on readmission status. Quality improvement projects like this have the ability to assist in allocating scarce resources and identifying opportunities for improvement in patient care. Continuing to evaluate patient trends and directing development of policies and procedures can serve patients in a way that addresses both social and medical needs. Doing so may help to deter hospital readmission and promote healthy habits that can lead to a greater quality of life for patients.

Mary Kemper graduated from Penn's MSW program in 2006 and has been working in the medical field ever since. After working with patients with HIV/AIDS in Center City and North Philadelphia, she transitioned to working with cardiac patients in West Philadelphia and the surrounding area. Mary started pursuing her MPH at Penn on a part-time basis a very long time ago and is extremely excited to be finishing in May of 2020. Mary's primary public health interests include addressing disparities in access to advanced medical therapies, as well as pursuing solutions to barriers to medical care caused by social determinants of health.

2:40 pm

Gabi Im

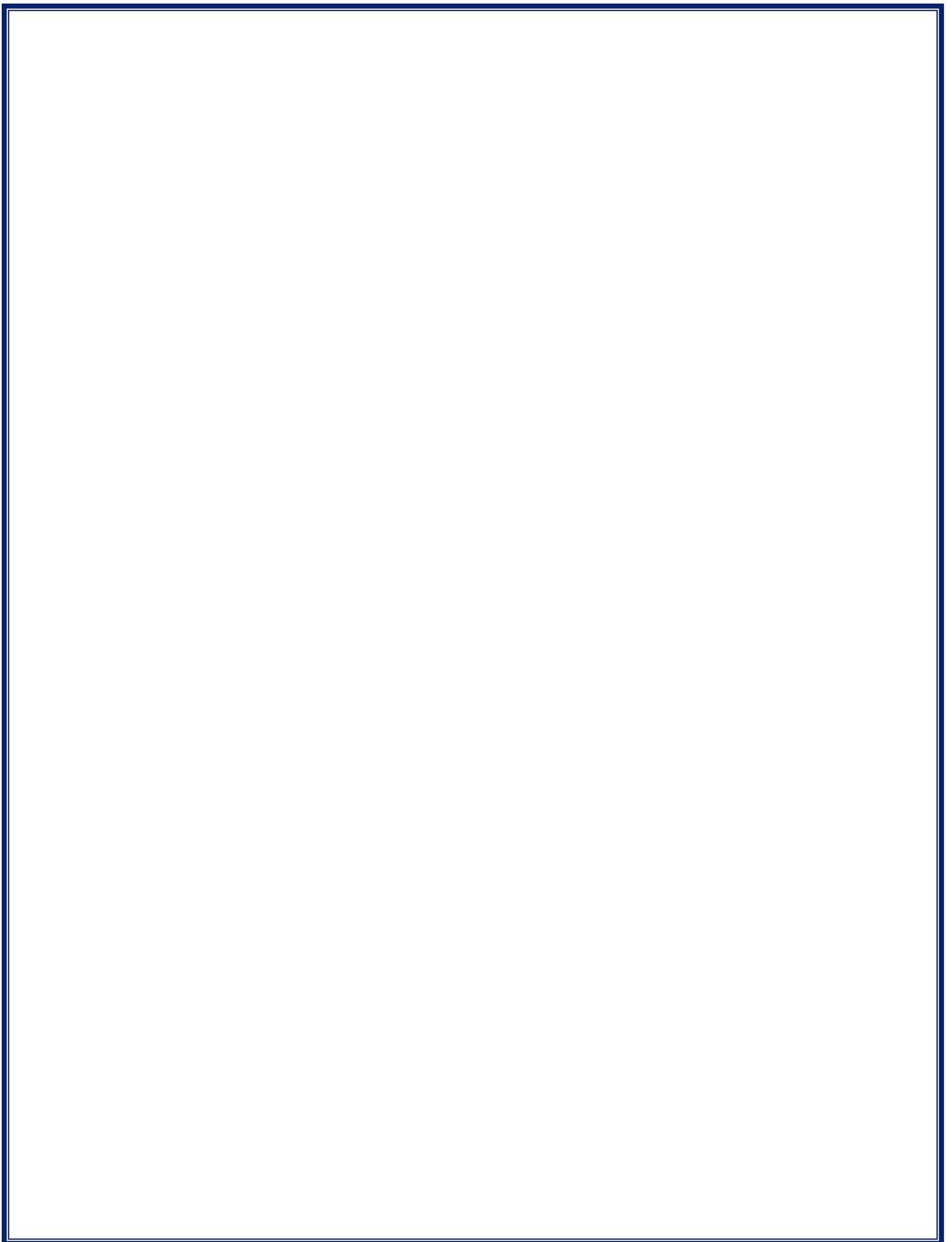
Mentors: Joan Gluch, PhD, RDH, PHDHP and Frances Shofer, PhD

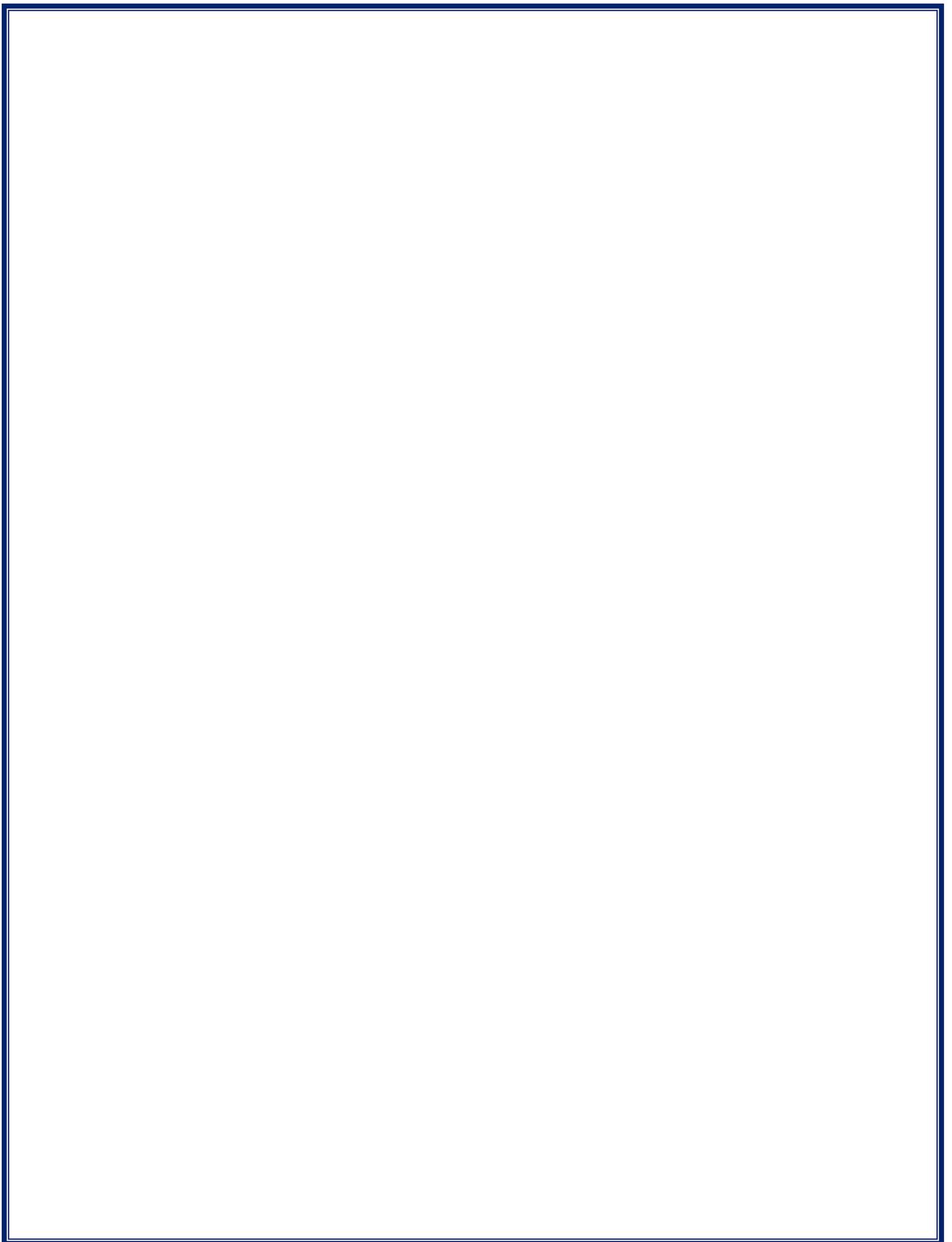
Open wide, a look inside: An oral health needs assessment of homeless youth

Abstract:

Young adults experiencing homelessness have noted difficulty finding a safe place to practice good oral hygiene and have avoided dental clinics, since they viewed office staff as impatient and judgmental. The most recent study identifying the oral health needs in this population was a quantitative, survey-based assessment of 55 homeless youth in a health clinic in Seattle, Washington in 2008. The young adult homeless population on the east coast has never been studied, and with a better understanding of their needs, more efficient, ethical, and culturally competent solutions can be pursued. In our study, we aimed to provide missing information on the oral health needs of homeless youth in Philadelphia. This study assessed the oral health conditions of homeless young adults in Philadelphia residing at Covenant House, a homeless shelter for youth ages 18 to 21. The study was designed and conducted in phases: collaboration with stakeholders, study development, participant recruitment, and recommendations and next steps. The study development included the protocol development, selection of study instruments, identification of the target population, IRB submission, REDCap migration, and inter-rater reliability. The results of this study are still ongoing and will identify and highlight individual barriers to care and social determinants behind oral health and hygiene in this population. They will also inform the development of an oral health program at Covenant House for homeless youth.

Gabi Im matriculated from Villanova University to the University of Pennsylvania in 2016 through the 7-year Bio-Dental Program. She will be graduating from the School of Dental Medicine and the MPH program in 2020. After graduation, Gabi plans on taking her passion for public health to the United States Air Force, where she will continue her studies as an officer in an Advanced Education in General Dentistry residency.







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