



@ APHA 2018

A Summary of Flint focused work
being presented during the
APHA Annual Meeting & Expo

San Diego, California | November 10th—14th

Table of Contents

MONDAY, NOVEMBER 12, 2018

Project Name (Section Number)	Pg.
Building Health Equity in Flint, Michigan (3024.0)	7
<ul style="list-style-type: none">• 8:30AM Community Dialogues: Engaging, Encouraging & Empowering Community/Academic Conversations• 8:50 AM Establishing population health data in Flint: A Response to a Community-based needs and Assets Assessment• 9:10 AM Measuring Social Support for Physical Activity and Nutritional Behavior Change in Flint, Michigan: A Mixed Methods Approach in the Church Challenge• 9:30 AM Incorporating Community Expert Knowledge to Establish the Flint Geospatial Healthfulness Index and Contextualize Neighborhood-Level Factors in Health Behavior Change	
Youth and Interpersonal Violence Prevention and Control Posters (3088.0)	10
<ul style="list-style-type: none">• 10:30 AM Evaluating the Effectiveness of Youth Empowerment Solutions (YES) Intervention and Trajectories of Violent Behavior	
Public Health Policy, Service Access, and Population Health Poster Session (3099.0)	11
<ul style="list-style-type: none">• 10:30 AM Behavioral Health Needs in Flint, Michigan after the Flint Water Emergency: Findings from a 2017 Community Health Assessment	

Table of Contents

MONDAY, NOVEMBER 12, 2018

Project Name (Section Number)	Pg.
Using Data and Research to Fuel Change in Policy and Practice (3139.0)	12
<ul style="list-style-type: none">• 10:50 AM Dissemination and Implementation Science Core: Research and Application of D&I Interventions to Increase Health Equity for Underserved Communities	
Correlations between Social Determinants and Men's Health (3166.0)	13
<ul style="list-style-type: none">• 11:30 AM Mental health effects of stress for black men in Flint, Michigan	
Community-based Physical Activity Interventions (organized jointly with the Physical Activity section) (3172.0)	14
<ul style="list-style-type: none">• 11:30 AM Improving health equity utilizing a community-wide physical activity strategy in high poverty, urban communities	
Topics in Social Epidemiology Poster Session (3205.0)	15
<ul style="list-style-type: none">• 1:00 PM Race and employment status toward sexual health using the NHANES 2009-2014	
Hot Off The Presses! Getting the Message Out with Public Health Authors (3228.2)	16
<ul style="list-style-type: none">• 1:00 PM What the Eyes Don't See: A Story of Crisis, Resistance, and Hope In An American City	

Table of Contents

TUESDAY, NOVEMBER 13, 2018

Project Name (Section Number)	Pg.
Drinking Water and Lead Service Lines: Partnering to Protect Public Health (4010.0)	17
<ul style="list-style-type: none">• 8:50 AM Tackling lead service lines at the local level: A water utility's perspective• 9:30 AM Drinking Water and Lead Service Lines: GAO and the Federal Nexus	
Longitudinal and Epidemiological Studies in Aging Poster Session (4070.2)	18
<ul style="list-style-type: none">• 9:00 AM Mild Cognitive Impairment and the likelihood of hospital admission: A longitudinal study	
Partnering Together With A Health Equity Lens Poster Session (4075.0)	19
<ul style="list-style-type: none">• 9:00 AM Flint Funding Opportunity - Building Capacity for Research and Action	
50th Anniversary of the Fair Housing Act: The Inter-section of Housing Law and Health Equity (4169.0)	20
<ul style="list-style-type: none">• 10:45 AM Healthy Homes: Lead, Radon, Brownfields and the Role of Law in Achieving Health in All Communities	
Community voices: Community member perspectives on community-academic partnerships and CBPR (presenting author must be a community member) (4144.0)	21
<ul style="list-style-type: none">• 11:10 AM Flint Community's Voice: A Theoretical Frame to Rebuild Trust and Support Other Communities in Crisis	

Table of Contents

TUESDAY, NOVEMBER 13, 2018

Project Name (Section Number)	Pg.
Poster Session 6 4204.0)	22
<ul style="list-style-type: none">• 1:00 PM In Stock or Not: A Socioeconomic and Geographic Analysis of Pharmacies in Flint, Michigan	
Poster Session III: Education and Interdisciplinary Topics in Oral Health (4220.0)	23
<ul style="list-style-type: none">• 1:00 PM Flint Dental Health Event: A Community-Driven Approach to Improving Oral Health Status	
Health Information Technology Use Among Pediatricians and Quality Care Poster Session 3 (4213.0)	24
<ul style="list-style-type: none">• 1:00 PM Health information technology use among pediatricians and quality of care	
Policies and practices that promote safer communities (4251.0)	25
<ul style="list-style-type: none">• 1:00 PM Crime Prevention through Environmental Design to Promote Safer Communities	
School health education, nursing, and practice poster session (4320.0)	26
<ul style="list-style-type: none">• 3:00 PM How project-based learning in a middle school science curriculum promotes healthy lifestyle choices in a racially diverse urban school district	

Table of Contents

WEDNESDAY, NOVEMBER 14, 2018

Project Name (Section Number)	Pg.
Unique data tools for measuring and promoting health equity: Lessons from the City Health Dashboard, County Health Rankings & Roadmaps, CDC's 500 Cities Project, and the National Equity Atlas (5013.0)	27
<ul style="list-style-type: none">• 9:10 AM City Health Dashboard: Municipal-level data for population health equity	
Cooking 101: Using Skills Based Nutrition Education to Shift Behaviors (5024.0)	28
<ul style="list-style-type: none">• 9:30 AM Kids will eat (and love) broccoli: Improving nutrition through family-based, hands-on learning	
Legal Regulation, Roles and Responsibilities to Address Environmental Health Hazards (5094.0)	29
<ul style="list-style-type: none">• 11:18 AM Protecting the public's health during municipal fiscal distress: Lessons from the Flint water crisis for public health and legal preparedness	
Film Session	30
<ul style="list-style-type: none">• 1:30 PM Double Up Food Bucks in Flint: The Power of Healthy Food Incentives in Response to a Community Health Crisis.	

Monday, November 12, 2018

3024.0 Building Health Equity in Flint, Michigan

(08:30 AM - 08:50 AM) Community Dialogues: Engaging, Encouraging & Empowering Community/Academic Conversations

Authors (first 3):

- ◆ E. Yvonne Lewis, *National Center for African American Health Consciousness*
- ◆ Tonya French-Turner, *Healthy Flint Research Coordinating Center*
- ◆ Kenneth Cabine, *Healthy Flint Research Coordinating Center*

Background: Community-based participatory research (CBPR) allows community members to participate in research that benefits the community at large. Having community at the forefront ensures that research is community based, versus community placed. For CBPR to thrive, the community must have an impetus for participation and investment in the work. In Flint, Michigan, the challenge was determining how researchers and community might coordinate the research agenda and concerns to create an equitable research partnership. The establishment of mutual respect and understanding is critical between community and academia to move the research forward. To address inequities that exist in CBPR, the Healthy Flint Research Coordinating Center (HFRCC) Community Core adapted the Community Dialogue model; which includes a minimum of four consecutive facilitated conversations engaging both community and academia. During each session, participants are guided through a series of four problem solving questions. These conversations begin with establishing a problem statement, which is then used to guide the remainder of the sessions. Ultimately, these participants identify the best possible solution (s) for addressing barriers and commit to working towards implementation. Participants are asked to attend all sessions to maintain continuity. The two Dialogue sessions held during the first year of HFRCC identified the best possible solutions as: mutual respect between researchers and community participants, effective communication of research processes, development of community-driven research agendas, and utilize social media as a platform to engage community residents. **Conclusion:** We present a model that allows community members to participate in research that benefits the community at large.

(08:50 AM - 09:10 AM) Establishing Population Health Data in Flint: A Response to a Community Based Needs and Assets Assessment

Authors (first 3):

- ◆ Mieka Smart, *Michigan State University*
- ◆ Rolando Barajas, *Michigan State University*
- ◆ Richard Sadler, *Michigan State University*

Background: The Flint Center for Health Equity Solutions' Needs and Assets Assessment (NAA) identified the need for a comprehensive public health data resource in Flint. The NAA highlighted that current local public health datasets are lacking in terms of their methodological rigor and/or their comprehensive coverage of public health issues. As a response, the Flint Area Study's (FASt) first wave is underway. The FASt is a longitudinal inter/multi-generational cohort study designed to assess environmental exposures and elucidate their long-term effects on Flint residents. **Methods:** The FASt uses a random probability sample and has three assessment phases. Phase 1 involved compiling a list of 400 inhabited households from random block-faces and collecting qualitative data on Flint neighborhoods. Phase 2 involved using the NfETy Method to assess social- and physical-environmental conditions at the Phase 1 households. Phase 3 will consist of residential surveys that measure for physical/behavioral health, multi-level social dynamics, and biological specimen collection every three years. Results from Phase 1 show that one-third of the assessed block-faces contained fewer than two inhabited households. Results from Phase 2 show geographical clustering of evidence of potentially protective environmental factors, levels of physical disorder and levels of social-environmental risk (including aggression, signs of violence and presence of alcohol and other drugs). Phase 3 is underway. **Conclusions:** FASt Phases 1 and 2 identified locations for targeted environmental intervention. Once combined with individual health outcome and biological data from Phase 3, the comprehensive FASt dataset will provide valuable information about unmet health needs.

(09:10 AM - 09:30 AM) Measuring Social Support for Physical Activity and Nutritional Behavior Change in Flint, Michigan: A Mixed Methods Approach in the Church Challenge

Authors (first 3):

- ◆ Rodlescia Sneed, *Michigan State University*
- ◆ Vicki Johnson-Lawrence, *Michigan State University*
- ◆ Ariel Angel-Vincent, *Michigan State University*

Background: Numerous studies have found that supportive social networks are crucial for positive health behavior change. Interventions to promote behavior change continue to be important in minority communities with high chronic disease rates. The Church Challenge is a faith-based multilevel community-based intervention to promote healthy diet and physical activity behaviors in order to reduce blood pressure levels among African American churchgoers in Flint, Mich. Within the context of this intervention, we use a mixed methods approach to understand the role of social support specifically within faith-based settings for behavioral change among Church Challenge participants. **Methods:** Our quantitative measure captured frequency of social support across multiple domains including interactions with friends, romantic partners, children, other church members, and coworkers. We then designed a set of semi-structured interview questions to collect complementary qualitative data to characterize social support from the perspective of the study participants, 1-3 members of their social networks, and as viewed by health team members of the participating churches. **Results:** With the 5 African-American churches currently enrolled in the study, our quantitative and qualitative measures have been well-received, but continue to be modified in response to the content recommendations of faith leaders within the churches. While the quantitative measures cover multiple domains of support, the depth of the relationships was more clearly captured with the qualitative assessment. **Discussion:** Approaches that utilize qualitative information are paramount for understanding the ways that social networks can hinder or promote behavioral changes crucial for reducing chronic disease burden in this population.

(09:30 AM - 09:50 AM) Incorporating Community Expert Knowledge to Establish the Flint Geospatial Healthfulness Index and Contextualize Neighborhood-Level Factors in Health Behavior Change

Authors (first 3):

- ◆ Richard Sadler, *Michigan State University*
- ◆ Christopher Hippensteel, *Michigan State University*
- ◆ Victoria Nelson, *Michigan State University*

Background: The built environment can affect one's ability to change behavior, thus neighborhood-level disparities contribute to health equity concerns. The NIMHD-sponsored Flint Center for Health Equity Solutions was established to address such concerns and inform policy change in Flint, Michigan, through the lens of community-engaged research. To inform individual and community-level interventions, we compiled spatially varying data that may correlate to health behaviors. We then engaged community and academic partners in their opinions about Flint's built environment via a multiple-criteria decision analysis. This informs GIS-based variable weights that comprise a healthfulness index, signaling a neighborhood's relative health promoting or degrading qualities. Broad categories and variables within them were ranked in order of importance using the analytic hierarchy process. Weights were then applied to corresponding map layers containing each variable, yielding 'healthfulness scores' for every home and neighborhood. These scores are then appended to research subjects to determine relationships between healthfulness and public health intervention outcomes. Areas with relatively better scores are expected to correlate more strongly to better or more sustained behavior change (while controlling for other individual-level factors) and vice versa. Flint is a notable case for the development of this index not only because of its water crisis, but because of decades of disinvestment that drive disparities. Yet this work is important to many communities with large inequities in health outcomes and built environments. Taking stock of assets and needs within a community lends critical insight into best next steps toward enacting policy change to advance health equity.

3088.0 Youth and Interpersonal Violence Prevention and Control Posters

(10:30 AM - 11:30 AM) Evaluating the Effectiveness of Youth Empowerment Solutions (YES) Intervention and Trajectories of Violent Behavior

Authors (first 3):

- ◆ Andria Eisman, *University of Michigan*
- ◆ Daniel Lee, *University of Michigan*
- ◆ Thomas Reischl, *University of Michigan*

Background: Violent behavior among adolescents is a pervasive problem that negatively influences their health and well-being. Evidence-based,

theoretically-informed interventions are critical to preventing and reducing youth violence. We investigate the effectiveness of the Youth Empowerment Solutions (YES) program on trajectories of violent behavior among youth during the 12 months following program completion. Methods: We recruited 382 middle school aged youth (60% female, Mage=12.62, SD=.96) attending after school programs at 13 middle schools in Flint and Genesee County, Michigan. Our sample included 35% white, 46% African-American, and 19% mixed race, or other ethnic/racial group youth. Participating schools had a high proportion (61-75%) of students eligible for free/reduced lunch. We used growth curve modeling to examine trajectories of violent behavior over time and evaluate whether participation in YES was associated with initial post-program levels of violence and change in violent behavior over time. Results: We found that violent behavior among all youth decreased over time. We also found that youth who participated in YES reported lower levels of post-program violent behavior compared to youth who participated in the standard after school program ($z=-2.21$, $p=.03$). We did not find an association between program participation and change in violent behavior over time, but the YES program youth maintained lower violence than non-program youth at every point post intervention. Conclusions: Participation in the Youth Empowerment Solutions intervention effectively reduced violent behavior at greater levels and maintained those reductions over time compared to youth in standard after school programs in an urban socioeconomically challenged community.

3099.0 Public Health Policy, Service Access, and Population Health Poster Session

(10:30 AM - 11:30 AM) Behavioral Health Needs in Flint, Michigan after the Flint Water Emergency: Findings from a 2017 Community Health Assessment

Authors (first 3):

- ◆ Rodlescia Sneed, *Michigan State University*
- ◆ Kenyetta Jackson, *Michigan Department of Health and Human Services*
- ◆ Kenyetta Dotson, *Genesee Health System*

Background: In the aftermath of the Flint Water Emergency (FWE), behavioral health needs have been an ongoing concern for residents, community members, and health officials. As a result, a robust and

coordinated behavioral health response was initiated in 2016 in partnership with federal, state, and local health authorities. Methods: To assess new and changing behavioral health needs, we conducted a Community Assessment for Public Health Emergency Response (CASPER) in Flint in late 2017 as a follow up to an identical assessment performed in early 2016. Utilizing a two-stage cluster sampling methodology, a representative sample of 176 households was selected within the geographic limits of the city of Flint for door-to-door interviews over a 3-day period. Standardized behavioral health assessments were administered to evaluate individual and household-level mental health needs and concerns. Findings were compared to local 2016 estimates and to state of Michigan data obtained from the 2015 Behavioral Risk Factor Surveillance System (BRFSS). Results: In 2017, 15% of respondents self-reported depressive symptoms and 17% self-reported symptoms of anxiety, compared to 29% and 33% of respondents in 2016, respectively. Further, 23% of individuals reported having poor mental health (e.g., stress, depression, and emotional problems) for 14 or more days within the last 30 days compared to 38% in 2016. In the state of Michigan, by comparison, only 11.9% of the total population reported similar poor mental health status. Conclusions: Our findings suggest that residents have behavioral health needs that exceed state estimates; however, behavioral health outcomes have improved in Flint since the onset of the FEW. Continued efforts are still needed in Flint to combat the harmful behavioral health effects of the FWE.

3139.0 Using Data and Research to Fuel Change in Policy and Practice

(10:50 AM - 11:10 AM) Dissemination and Implementation Science Core: Research and Application of D&I Interventions to Increase Health Equity for Underserved Communities

Authors (first 3):

- ◆ Amy Drahota, *Michigan State University*
- ◆ Luther Evans, *Community Based Organization Partners*
- ◆ Maji Debena, *Michigan State University*

Introduction: Targeted dissemination of research outcomes is a key strategy for improving public health. While federally-funded research centers are required to have a dissemination core, efforts are typically directed toward

academics (e.g., manuscripts, academic presentations). However, opportunity exists to leverage the dissemination core requirement in center grants by involving specific dissemination and implementation (D&I) research aims. Project Description: The NIMHD-funded Flint Center for Health Equity Solutions (FCHES) is a transdisciplinary collaborative center, utilizing a CBPR approach, focused on reducing health disparities. DISC specific aims include: (1) Converting FCHES research projects into hybrid effectiveness-implementation trials; (2) Collaborating with the FCHES Consortium Core to keep community partners informed of FCHES activities; (3) Evaluating dissemination, implementation and sustainment of previous health promotion efforts to inform the development of DISC D&I toolkits; (4) Developing a dissemination toolkit for community use then research its reach and impact across community agencies; (5) Utilizing D&I theory and research evidence to develop policy-change strategies and evaluate the reach and impact of these strategies; and (6) Training regional stakeholders in use of D&I toolkits, policy-change strategies, and effective dissemination of research findings. The DISC will generate knowledge that is relevant and meaningful to community needs. The target audience for DISC efforts includes FCHES academic and community partners, community stakeholders, service providers, policy-makers, consumers, and the general public locally, regionally, and nationally. Evaluation Plan: We will provide the rationale for embedding D&I research questions into effectiveness trials as well as the specific processes that were utilized by the DISC team to accomplish this specific aim within two distinctly different FCHES research projects. Conclusion: To our knowledge, this is the first center-funded dissemination core that focuses on conducting D&I research within a NIMHD-funded center, collaborating with cores to embed D&I methods, and involving a CBPR approach to apply findings for community use. Moreover, the DISC may be able to act as a model for future center dissemination cores. Embedding dissemination and implementation science research into center project activities from the outset may facilitate uptake of findings and reduce research-to-practice gaps.

3166.0 Correlations Between Social Determinants and Men's Health

(11:30 AM - 11:50 AM) Mental health effects of stress for black men in Flint, Michigan

Authors (first 3):

- ◆ Kent Key, *Michigan State University*
- ◆ Lenwood Hayman, *University of Michigan - Flint*
- ◆ Naledi Makhene, *Michigan State University*

Background: Black men who live in low-resource communities are exposed to significant stress that affects their mental health. The Flint Man Up Man Down Study is a qualitative investigation of masculinity, stress, and depression among adult Black men in Flint, Michigan. Based on previous research showing age differences in how Black men cope with chronic stress, this study conducted two focus groups within three age categories (18-30, 31-49, and 50+). The same interview protocol was used for all six groups. An initial review of the transcripts revealed dynamic conversations, across all focus groups, on masculinities, racial discrimination, economic adversity, community violence, family support, grief, depression, barriers to help-seeking, and water insecurity. All focus group transcripts have been entered into Dedoose for text-segmentation, coding, and more extensive analysis to identify major themes. This presentation will highlight findings from the thematic analysis with emphasis on age-related stressors and mental health. The presentation discusses how such findings can be used to identify ways to help Black men in emotional distress. This study also demonstrates an effective approach to engaging Black men in group dialogues centered on sensitive, personal topics related to emotions, feelings, and depression. Implications for how this study will be used to develop men's outreach programs to address Black men and depression are discussed. This investigation is a partnership among the Flint Community Based Organization Partners, the University of Michigan Flint Department of Public Health and Health Sciences, and the Michigan State University College of Human Medicine's Division of Public Health.

3172.0 Community-based Physical Activity Interventions (Organized Jointly with the Physical

(11:30 AM - 11:50 AM) Improving health equity utilizing a community-wide physical activity strategy in high poverty, urban communities

Author:

- ◆ Nichole Smith-Anderson, *Greater Flint Health Coalition*

Background: Data indicates approximately 68% of Flint & Genesee County residents are either obese or overweight. Driven by poor health behaviors (Genesee County ranks 81st of 82 Michigan counties) and a variety of social and environmental inequities (Flint Water Crisis), residents have a greater prevalence of chronic disease when compared to many other communities in the state and nation. To create health equity and improve health behaviors, the Greater Flint Health Coalition launched Commit to Fit! in 2011. This initiative has mobilized residents, employers, schools, neighborhoods, health care providers, and churches to utilize a common message and shared strategies leading to healthier, more active lifestyles. To promote active lifestyles, a web-based registry and social support network, commit2fit.com, was designed to provide free personal health behavior progress tracking, annual wellness challenges, and an innovative integration of wearable fitness technology. This web-based registry is available, free of charge, to residents, local businesses, churches, and schools for custom wellness challenges. Since its launch, Commit to Fit! has engaged over 350 businesses, organizations, and community groups. The web-based registry has hosted 38 community-wide wellness challenges and currently has 11,700 active users. Following participation in a wellness challenge 85.7% of participants reported engaging in physical activity 3 or more days per week. In 2016, by leveraging existing partnerships, over 706 (Approximately 60 per month) free fitness classes were available to Genesee County residents. To support the long-term success of the program, community residents are surveyed annually to ensure perceived barriers to physical activity are being addressed.

3205.0 Topics in Social Epidemiology Poster Session

(1:00 PM - 2:00 PM) Race and employment status toward sexual health using the NHANES 2009-2014

Author:

◆ Rie Suzuki, *University of Michigan-Flint*

Background: Contrary to sexual activity in adolescents, previous studies have shown that unemployment indicates a barrier of engaging in sexual behaviors among the U.S. adults. Although health promotion programs targeting sexual behaviors are available in minority communities, few studies have investigated the effects of race on employment status and sexual behavior. The purpose of this study was to examine the associations of employment

status and race with sexual behavior. Data were derived from the National Health and Nutrition Examination Survey 2009-2014 in a representative sample of adults aged between 20 and 59 years. The weighted logistic regression models were performed using SAS software. Study covariates were age, race, education, marital status, usual source of care, and insurance. Of 10,197 adults, the majority was Caucasian (69%) and female (51%), had a bachelor's degree (34%), was married (62%), had a usual source of care (82%) health insurance (76%), and was employed (73%). The results indicated that when participants (men and women) were unemployed, Mexican Americans were more likely to indicate the higher rate of sexual activity during the past year. African Americans were less likely to use protection and more likely to have genital herpes. Caucasians were more likely to have genital warts. To improve sexual health, access to sexual education among minority groups is important, especially for unemployed adults in community settings.

3228.2 Hot Off The Presses! Getting the Message Out with Public Health Authors

(1:00 PM - 1:20 PM) What the Eyes Don't See: A Story of Crisis, Resistance, and Hope In An American City

Author:

♦ Mona Hanna-Attisha, *Hurley Medical Center/Michigan State University*

Advocacy is at the very heart of the core function of public health assurance as is academic scholarship. Recently several esteemed public health practitioners have used their academic skills to craft texts that tell the remarkable true story of public health practice. Through the writings of Dr. Mona Hanna-Attisha from Flint Michigan we learn about the need to speak truth to power; Dr. Marion Nestle from New York on the role of politics in food policy and; Dr. Sandro Galea with 50 tales of the foundational aspects of population health - an affirmation and an essential summary of the current challenges and opportunities for those working in and around the improvement of population health. A roundtable conversation that is not to be missed.

3334.0 Protecting Our Children: A National Review of Environmental Health Services

(3:40 PM - 4:00 PM) Environmental Health Concerns: Voices of Flint, MI

Author:

- ◆ E. Yvonne Lewis, *National Center for African American Health Consciousness*

APHA partnered with community-based organizations in Flint, Mich and Washington, DC to host community forums to provide local voices to the national scan. The Healthy Flint Research Coordinating Center is a partnership between Flint community-based organizations, Michigan State University, University of Michigan Ann Arbor and Flint campuses, to help address the public health challenges in Flint, including a focus on the economic, environmental, behavioral, and physical health of residents. With HFRCC's leadership and facilitation, the community forum provided a platform for Flint parents and caregivers of young children to openly share their experiences with accessing environmental health services. This presentation will explore key themes expressed by Flint parents and caregivers and how HFRCC and its partners are building on the strength and resilience of the community and working together to improve community relations, coordination and communication.

Tuesday, November 13, 2018

4010.0 Drinking Water and Lead Service Lines: Partnering to Protect Public Health

(8:50 AM - 9:10 AM) Tackling lead service lines at the local level: A water utility's perspective

Author:

- ◆ Stephen Estes-Smargiassi, *Massachusetts Water Resources Authority*

Post-Flint, many communities are relooking at investment in reducing potential exposures for lead service lines. The presenter will offer practical advice on how water systems and health departments can work together to understand risk and encourage practical action.

(9:30 AM - 9:50 AM) Drinking Water and Lead Service Lines: GAO and the Federal Nexus

Authors:

- ◆ Tahra Nichols, *U.S. Government Accountability Office*
- ◆ Diane Raynes, *U.S. Government Accountability Office*

Drinking water contaminated with lead in Flint, Michigan, renewed awareness of the danger lead poses to the nation's drinking water supply. Lead exposure through drinking water is caused primarily by the corrosion of plumbing materials, such as pipes (including lead service lines), that carry water from a water system to pipes in homes and other buildings, such as schools. In particular, lead service lines are a major source of lead in drinking water. However, the number of lead service lines across the nation is unknown. Currently, the federal government does not require local water systems or states to maintain information about lead service lines. Recently, some states and local water systems have begun to collect and maintain information about lead service lines. What challenges might these and other states and water systems face? This presentation will highlight major findings from GAO's published work on lead, focusing on (1) the importance of knowledge about lead service lines to federal oversight of drinking water; (2) what is known about federal, state, and local efforts to obtain more information about lead service lines, and (3) federal guidance for lead testing of school plumbing materials.

4070.2 Longitudinal and Epidemiological Studies in Aging Poster Session

(9:00 AM - 10:00 AM) Mild Cognitive Impairment and the likelihood of hospital admission: A longitudinal study

Authors:

- ◆ Reza Amini, *University of Michigan-Flint*
- ◆ James H. Swan, *University of North Texas*

This paper aims to examine the impact of Mild Cognitive Impairment (MCI) on the likelihood of hospital admission among Medicare beneficiaries in 2011-2015, with the hypothesis that the level of cognition can predict the risk of frequent hospital admission. The data were driven from four waves of National Health and Aging Trends Study (2011-2015). Zero-inflated Poisson

revealed that the likelihood of frequent hospital admission is 53% and 62% higher respectively among respondents with MCI and moderate cognitive impairment compared to those with normal cognitive function. Having history of surgery, falling down, heart attack, lung disease, and poor self-rated health condition are other significant factors which can increase risk of frequent hospital admission. As the other control variables, having difficulties with these daily activities was significantly correlated with frequent hospital admission: laundry, shopping, meal preparation, climbing 20 stairs, and going out. Those respondents covered by Medicaid were more likely to have zero hospital admission, which can be considered as a barrier, unlike what has been reported about the role of Medicaid in healthcare utilization. Based on these findings, MCI can increase risk of frequent hospital admission; conversely, it is well-known that hospital admission can trigger cognitive impairment. Hence, screening for cognitive function during admission process can create more diagnostic and secondary preventive intervention opportunities for decelerating the trace of cognitive impairment among the at risk patients. As a result, both the healthcare utilization, in particular cost of care, and the consequences of hospital admission will decline.

4075.0 Partnering Together With A Health Equity Lens Poster Session

**(9:00 AM - 10:00 AM) Flint Funding Opportunity - Building Capacity for
Research and Action**

Authors (first 3):

- ◆ Karen Calhoun, *Michigan Institute for Clinical and Health Research*
- ◆ E. Hill DeLoney, *Community Based Organization Partners (CBOP)*
- ◆ Patricia Piechowski-Whitney, *University of Michigan*

The Michigan Institute for Clinical & Health Research (MICHR) partnered with Community-Based Organization Partners (CBOP) to address health issues in Flint through a new funding opportunity. Building Capacity for Research and Action in Flint aims to strengthen capacity of partnerships to engage in, and benefit from the translational research enterprise. The funding collaborative who developed the mechanism feels the strength of the research partnership is as essential as the quality of research planned. Applicants requested funding for community-engaged research partnership development (\$5,000) or a research project (\$10,000) addressing community priorities in Flint,

Michigan. In the first round of funding, MICHHR received 20 applications and funded 6 which represented a wide range of addressed community-identified research priorities. Funded projects utilized approaches to enhance/build capacity of community-academic teams supporting principles of community-engaged research, community based participatory research and multi-disciplinary approaches utilizing diverse forms of collaboration. To encourage measurable outcomes on partnership dynamics and community health improvement, awardees were encouraged to utilize a partnership tool at the beginning and end of the project to measure concepts such as trust, group dynamics and community health impact. The funding mechanism is part of MICHHR's Flint-Forward initiative to support new research projects utilizing diverse, multi-disciplinary approaches leading to an increased number of sustainable community-academic partnerships addressing community-identified priorities. We will describe the process utilized to develop the request for proposals, the community engaged funding review and decision process, lessons learned, projects selected for funding, outcomes measured, and funded partnership's plan for sustainable community action and impact.

4169.0 50th Anniversary of the Fair Housing Act: The Intersection of Housing Law and Health Equity

(10:45 AM - 11:00 AM) Healthy Homes: Lead, Radon, Brownfields and the Role of Law in Achieving Health in All Communities

Authors (first 3):

- ◆ Dawn Pepin, *Centers for Disease Control and Prevention*
- ◆ Jennifer Black, *Centers for Disease Control and Prevention*
- ◆ Tara Ramanathan, *Centers for Disease Control and Prevention*

The recent crisis of lead in drinking water in Flint, Michigan shed light on how our homes impact health outcomes for all populations. Public health practitioners and lawyers, housing advocates, and environmentalists work on issues with health and homes, collaborating more richly than groups in other domains when adopting new laws that address more of the concerns raised by each group individually. The presenter will explore the role that law plays in assuring that homes are healthy through the lens of lead laws, radon laws,

and brownfield laws. This presentation will include a brief explanation of the results of 50 state assessments on lead laws and radon laws. The results will frame a discussion on how laws requiring disclosure and testing can and are used to ensure healthier homes for all populations. The presenter will also discuss how brownfields, which are abandoned or under-used lands and facilities burdened with toxins and environmental contaminants, are likely to lead to adverse health outcomes. The presenter will review case studies that examine the legal landscapes of local land reuse projects for brownfields. These laws can help ensure human health and exposures are accounted for in all populations. The presenter will highlight how these three issues are disproportionately present in low-income areas and communities of color. Finally, the presenter will use these examples to demonstrate how law is a powerful tool to achieve health justice.

4144.0 Community Voices: Community Member Perspectives on Community-Academic Partnerships

(11:10 AM - 11:30 AM) Flint Community's Voice: A Theoretical Frame to Rebuild Trust and Support Other Communities in Crisis

Authors (first 3):

- ◆ Kent Key, *Michigan State University*
- ◆ E. Yvonne Lewis, *National Center for African American Health Consciousness*
- ◆ Karen Calhoun, *Michigan Institute for Clinical and Health Research*

In the years leading up to and following the Flint water crisis, community residents, activists and leaders mobilized to protest unjust policies and decisions that created and prolonged the crisis. The Flint community notes many stakeholders have been left out of narratives, contributing further to deep mistrust. The community's voice should be the most influential narrative guiding institutional responsiveness. This project will explore/document levels of trust and mistrust, share ways to rebuild trust, and reduce and eliminate stress. This will be the first project to rigorously document/analyze levels of trust and mistrust in the city of Flint post-crisis. Utilizing purposive sampling, we will hear from voices not often included in narratives (i.e., seniors, youth, Hispanic/Latino residents, stakeholders representing undocumented immigrants, faith leaders, etc.). Community Based Organization Partners

partnered with the Michigan Institute for Clinical & Health research to address the Flint water crisis. This presentation will highlight data and lessons learned from three mixed methods research projects involving a qualitative analysis of community voice, focus groups with community stakeholders who may be left out of narratives, and perceptions of trust shared from a trust mechanism. Our analysis is contextualized in relationship to approaches and theories presented in literature, however, we feel unique domains guiding our work may be overlooked or not evident in existing literature and theory. Thus, we are developing a new theoretical frame that will identify and explore core theories and concepts recommended by the community to help foster trust and the quality of life in Flint, Michigan.

4204.0 SA Poster Session 6

(1:00 PM - 2:00 PM) In Stock or Not: A Socioeconomic and Geographic Analysis of Pharmacies in Flint, Michigan

Authors (first 3):

- ◆ Rohit Nallani, *Michigan State University*
- ◆ Anne Drolet, *Michigan State University*
- ◆ Fredrick Hetzel, *Michigan State University*

Introduction: Flint, Michigan has faced multiple inequities: racial discrimination has generated redlining and white flight; deindustrialization has caused disparities in unemployment and loss of access to services (including healthy food); and the water system has caused Legionella and lead exposure crises. Research has shown that all of these inequities vary between neighborhoods. Pharmacies are an important resource for healthcare services but are often likewise unevenly distributed between different neighborhoods. Previous studies from urban areas have demonstrated relationships between geographic access to pharmacies and medication pricing. We hypothesized that this disparity also exists within Flint, with geography further impacting pharmacy services and products offered. **Methods:** Investigators visited Flint-area pharmacies to examine the variety of services and the availability and affordability of common items. An electronic questionnaire was distributed to store managers to assess Medicaid coverage and current stock of the 14 most commonly prescribed medications. SPSS and ArcGIS were used to analyze and geocode the data, along with

neighborhood socio-economic distress (SED) and other characteristics. Results: Through geospatial and statistical analyses, our results show that more distressed neighborhoods have both fewer and poorer quality pharmacies, as well as poorer drug and product availability. Conclusion: Given this additional disparity in the health-promoting qualities of Flint neighborhoods, we are working with policy makers and health care providers to develop targeted interventions to improve access. This will further serve as a model for similar cities looking to address unequal access to pharmacies and other healthcare services.

4220.0 Poster Session 3: Education and Interdisciplinary Topics in Oral Health

(1:00 PM - 2:00 PM) Flint Dental Health Event: A Community-Driven Approach to Improving Oral Health Status

Authors (first 3):

- ◆ Janay Johnson, *Michigan State University*
- ◆ Bianca Donald Alexander, *Michigan State University*
- ◆ Jessica Mims, *Michigan State University*

The 2015 Michigan Behavioral Risk Factor Survey found that 31% of Flint/Genesee County residents had not seen a dentist in the past year. Flint residents were also concerned about the effect of the “Flint Water Crisis” on access to fluoridated water. Therefore, the Flint Community Based Organization Partners and the MSU Division of Public Health organized two community dental health events, one in 2016 and another in 2017. The purpose was to: (1) assess the need for dental treatment; (2) connect participants to dental services; and (3) conduct follow up on treatment-seeking. A strategic marketing plan using print, social media, and flyer distribution, informed Flint residents of the dental health events. Dentists assessed oral health with the Brief Screening Scale. Based on the BSS, participants were told they had no obvious dental problems, seek urgent care, or to see the dentist in the next several weeks. One hundred-nineteen participants were screened in 2016; 276 were screened in 2017. In 2016, 42% of participants were 46-65 years of age. In 2017, 55% of participants were 0-20 years old. In 2016, 50% of those screened were recommended to

seek urgent care. In 2017, 33% were told to seek urgent care. The most common reasons for not seeking treatment were “work schedule,” “no insurance,” “illness,” and “no dentist.” The number screened increased from 2016 to 2017, especially for youth. The number of boys screened also increased but the rate for adult men did not. The implications of oral health screening events are discussed.

4213.0 Poster Session 3

(1:00 PM - 2:00 PM) Health information technology use among pediatricians and quality of care

Authors (first 3):

- ◆ Gergana Kodjebacheva, *University of Michigan - Flint*
- ◆ Loretta Walker, *University of Michigan-Flint*
- ◆ Kanday Campbell, *University of Michigan - Flint*

Background: Studies on health information technology (HIT) usage in pediatric care are limited. The Agency of Healthcare Research and Quality has the goal of promoting the use of HIT to improve children’s health. **Objectives/Goals** The study investigates the extent to which HIT is used by pediatricians, associations between use of HIT and healthcare quality among pediatricians, and recommended ways on how to promote HIT among pediatricians and families. **Methods/Materials.** A total of 115 pediatricians in Genesee County, Michigan are randomly chosen and administered a survey via Qualtrics or through mail. To analyze HIT usage, questions about electronically sharing records with other physicians, using reminders for preventative care, and giving access to records to families from home are asked. To assess quality of care, questions about patient safety, medication errors, and responsiveness to parents are asked. To evaluate physicians’ needs for improvement, questions on the barriers to technology use and suggestions for better incorporation of technology are asked. **Results** The study is ongoing with a completion date in April 2018. We will describe and compare the use of HIT overall, and by physician age, gender, and practice size. We will present the findings of logistic regression on the associations of HIT use to each quality of care measure controlling for physician age, gender, and practice size. We will describe and compare knowledge about and perceptions of HIT overall and by physician age, gender, and practice size.

Suggestions for improving the use of HIT will be presented based on responses to the open-ended questions by physicians. Discussion/Conclusions: Information technology interventions have the potential for reducing errors and promoting effective communication between physicians and families. This research will be used to develop an intervention to improve HIT usage and pediatric care.

4251.0 Policies and Practices that Promote Safer Communities

(1:00 PM - 1:20 PM) Crime Prevention through Environmental Design to Promote Safer Communities

Authors (first 3):

- ◆ Thomas Reischl, *University of Michigan*
- ◆ Laney Rupp, *University of Michigan*
- ◆ Thomas Wyatt, *Kettering University*

Background: Crime Prevention through Environmental Design (CPTED) strategies change features of the built and natural environment to reduce opportunities for violence and other crimes. CPTED strategies include promoting territoriality, surveillance, access control, target hardening, legitimate activity support, and image management. We studied the effects of CPTED strategies implemented by a coalition of institutional and community-based partners (including local police) in an urban corridor in Flint, MI over a three-year period (2014-2016). **Objectives:** Participants will be able to explain how CPTED strategies can be a viable public health approach to reducing violence and promoting community safety. **Methods:** We tracked the location and intensity of all CPTED efforts within the targeted urban corridor. We also assessed three types of geocoded outcomes in the urban corridor and in a comparable area of Flint: 1) blight elimination assessed by repeated observations of parcel maintenance for all parcels in the intervention area and all parcels in the comparison area; 2) resident engagement assessed by multiple surveys of residents in the intervention area and in the comparison area; and 3) crime incidents (police records) in the intervention and comparison areas. **Results:** Blight Elimination--We noted improvements in landscape maintenance in the intervention areas, but not in the comparison area. Resident Engagement--In the intervention area, we found significant improvements in neighborhood participation, perceived physical disorder,

neighborhood satisfaction, and mental health symptoms. We also noted improvements in reported victimization and fear of crime in the intervention area. Crime Reduction--We found reduced violent assault crimes in the intervention area, while assault crimes decreased at slower rates in the comparison area. The number of robberies also decreased, but this trend was most evident in the area with the most police surveillance. We also noted decreases in burglaries and vandalism in the intervention area. Conclusion: CPTED strategies conducted by a coalition of institutional and community partners appear to reduce violence and other crimes. Public Health Implications: This study suggests that violence incidents and other crimes can be reduced in an urban setting by a coalition of institutional and community partners using CPTED strategies.

4320.0 School Health Education, Nursing, and Practice Poster Session

(3:00 PM - 4:00 PM) How project-based learning in a middle school science curriculum promotes healthy lifestyle choices in a racially diverse urban school district

Authors (first 3):

- ◆ Stephen M. Modell, *University of Michigan*
- ◆ Irene Bayer, *Michigan State University*
- ◆ Idit Adler, *Michigan State University*

"Health in Our Hands" is a middle school science curriculum partnering public health, science education, and community in a racially diverse urban center, Flint, Michigan. Project-based learning (PBL) helped students (N=650) and adults understand gene-environment interactions and disease risk. Students learned about Monique, a teenager experiencing Type-2 diabetes. As a final project, they conducted community action projects to improve their school or neighborhood environment to prevent or reduce diabetes, and presented back to their community. Mixed methods approach: Pre-post matched surveys, student presentation event questionnaires, classroom observations, and interviews. Years 4 and 5 data were analyzed using SPSS GLMM. Curricular survey responses showed statistically significant Pre/Post gains in 6th grade attitudes towards learning about diabetes and health ($P<.0005$). Interest in genetics and the environment was sensitive to teacher identity. Students showed increased agreement ($P<.02$) that information obtained

outside the classroom is useful for learning about health and nutrition; more than 60% of Year 4 closing event respondents strongly agreed the event led them to consider healthier food choices. During interviews, students discussed the importance of sharing what they learned with family and community. For adults, discussions about healthy lifestyle choices were sporadic and dependent on knowing a student who was involved in final projects and whether someone in the family has diabetes. Results show that PBL in the science curriculum helped students and their families learn the value of healthy food choices and increased physical activity (exercise). Collaboration between teachers, students, and parents is central.

Wednesday, November 14, 2018

5013.0 Unique Data Tools for Measuring and Promoting Health Equity: Lessons from the City Health Dashboard, County Health Rankings & Roadmaps, CDC's 500 Cities Project, and the National Equity Atlas

(9:10 AM - 9:30 AM) City Health Dashboard: Municipal-level data for population health equity

Authors (first 3):

- ◆ Shoshanna Levine, *NYU School of Medicine*
- ◆ Marc Gourevitch, *NYU School of Medicine*
- ◆ Lorna Thorpe, *NYU School of Medicine*

There has been a dearth of actionable data that clearly depicts local health needs and is framed to foster improvements. In the U.S., public health data is routinely reported by counties and states, but inconsistently at the municipal level, hindering efforts to use data to strengthen cross-sector partnerships to build healthier, more equitable communities. To address this gap in city-level indicators of health and health determinants, a team at NYU School of Medicine and NYU Wagner School of Public Service developed the City Health Dashboard, a web-based resource that includes 26 actionable measures of health outcomes, health determinants, and health equity across five domains: social and economic factors, physical environment, health behaviors, health outcomes, and clinical care. Built with input and feedback from four pilot cities – Waco, TX, Kansas City, KS, Flint, MI and Providence,

RI – the Dashboard presents small area estimates calculated to the city and, where possible, sub-city level, from multiple data sources, including the Behavioral Risk Factors Surveillance System, American Community Survey, American Housing Survey, National Vital Statistics System, United States Department of Agriculture, and state education datasets. Where available, data is also disaggregated by demographic characteristics. Feedback from the four pilot cities has demonstrated the success of this tool in bringing together local stakeholders to measure, understand, and take action to address the most pressing needs around health and social determinants in their communities. For example, community health workers in Waco, Texas used Dashboard data to pinpoint the leading health and social service needs in their individual catchment areas to target programming and services to better help the residents they are working with. Based on this early success, the Dashboard is now being scaled to all 500 US cities of population $\geq 70,000$ for release in May 2018. The new site will include 10 new metrics, additional data visualizations, and resources connecting data to action, greatly expanding its reach in engaging intersectoral partners to improve the health of local communities. Through this scale-up, the Dashboard can achieve its goal of becoming a core resource for urban health equity for communities across the country.

5024.0 Cooking 101: Using Skills Based Nutrition Education to Shift Behaviors

(9:30 AM - 9:50 AM) Kids will eat (and love) broccoli: Improving nutrition through family-based, hands-on learning

Author:

◆ Heather Barker, *Greater Flint Health Coalition*

Introduction: The Greater Flint Health Coalition's Commit to Fit! Cooking with Kids program was launched in summer 2016. This program was designed in response to the Flint Water Crisis to support lead-mitigating nutrition programming and education in the community. Approach: This evidence-based program empowers children and families to make healthy food choices through hands-on learning with fresh, affordable foods from diverse cultural traditions. The program was designed for children grades K-6, with lessons that align with Common Core standards. This program is unique as it

leverages existing community resources such as the Flint Children's Museum and local storytellers to make it well-rounded, family-based learning experience. Held at the Flint Children's Museum (FCM), participating families were able to play and explore the museum for free prior to the class beginning. Additionally, FCM had a large outdoor garden that allowed the children and families to explore, learn, and pick locally grown produce. Participants were surveyed at the beginning and end of the six-week cohort. Results Outcomes include: • 100% increase in children who were willing to try new foods • 88% increase in children who ate more fruits and vegetables • 100% increase in families that ate more meals together • 97% increase in families who cooked more meals at home Discussion: Since 2016, the Greater Flint Health Coalition's Commit to Fit! Cooking with Kids program has reached over 1,978 participants. The positive outcomes of this program reaffirms the need for family-based, hands-on learning, especially in high poverty, urban communities.

5094.0 Legal Regulation, Roles and Responsibilities to Address Environmental Health Hazards

(11:18 AM - 11:30 AM) Protecting the public's health during municipal fiscal distress: Lessons from the Flint water crisis for public health and legal preparedness

Authors (first 3):

- ◆ Colleen Healy Boufides, *University of Michigan*
- ◆ Peter D. Jacobson, *University of Michigan*
- ◆ Jennifer Bernstein, *University of Michigan*

The Flint water crisis is an unfortunate reminder that communities are endangered when health is not considered in policy-making. To ensure that future policy decisions incorporate lessons learned from this preventable disaster, we analyzed how the intersection and implementation of various laws affected decisions addressing a municipality's immediate financial crisis at the expense of the community's long-term health. In particular, we distinguished structural legal failures (failures of law) from implementation failures (failures to perform) to develop recommendations for public health law and practice. In addition, we examined municipal fiscal distress laws across twenty states and developed recommendations for revising and

implementing emergency manager laws to better protect the health of communities in financial distress. There is little doubt that the Flint water crisis presages similar critical challenges facing many American cities. Importantly, because emergency manager laws are invoked in financially distressed communities, they disproportionately affect our most vulnerable populations. This session will explain how the complex legal framework shaped decision-making and undermined accountability in Flint and will discuss how the emergency manager's appointment affected public health legal authority. The session will also identify key features of and alternatives to emergency manager laws and will describe ways in which emergency manager laws intersect with other laws. Finally, the session will introduce a methodology and step-by-step handbook designed to facilitate public health legal preparedness, especially in communities governed by emergency managers.

Film Session

(1:30 PM - 1:34 PM) Double Up Food Bucks in Flint: The Power of Healthy Food Incentives in Response to a Community Health Crisis

Authors (first 3):

- ◆ Sarah Hesterman, *Fair Food Network*
- ◆ Emilie Engelhard, *Fair Food Network*

Title: Double Up Food Bucks in Flint: The Power of Healthy Food Incentives in Response to a Community Health Crisis.

In 2016, Flint, Michigan, made national headlines after residents, including thousands of children, were exposed to toxic lead levels from the city's water supply. In the wake of this public health crisis, one of the most promising and proven solutions to emerge involved not water, but good food. The healthy food incentive program Double Up Food Bucks launched at the Flint Farmers' Market in 2011. Double Up matches SNAP dollars spent on fresh fruits and vegetables. In response to the water crisis, Fair Food Network expanded its Double Up program to better serve Flint families with the healthy foods needed most at this time. The "Double Up is Good For Flint" video targets Double Up users, community advocates and ambassadors. Additional "shorts" were aired on local television stations and promoted online. The video elevates Flint voices, showing Flint's tenacity and spotlighting how Double Up is helping in this crisis.

Honorable Mention

YOUR Center, 2018 American Public Health Association Betty J. Cleckley
Minority Research Award

**The Design of an Intervention to Promote Older Adult African Americans' use
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Notes

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The Flint Center for Health Equity Solutions (FCHES) is a National Institute on Minority Health and Health Disparities-funded Transdisciplinary Collaborative Center for health disparities research on chronic disease prevention that is specifically focused on Flint with broader implications from this work across the state and the nation. (Michigan State University NIMHD; #U54MD011227).



**Healthy Flint Research
Coordinating Center**

The Healthy Flint Research Coordinating Center (HFRCC) is a joint collaboration between Flint community partners; Community Based Organization Partners – Community Ethics Review Board (CBOP-CERB) and the National Center for African American Health Consciousness (NCAAHC), with the support of Michigan State University, the University of Michigan – Flint and the University of Michigan.

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