



2018 Annual Meeting
Poster Session
Abstracts

Poster Session 1



ELEVATING ORAL HEALTH INTERPROFESSIONAL PRACTICE AMONG PEDIATRICIANS THROUGH A STATEWIDE QUALITY IMPROVEMENT LEARNING COLLABORATIVE Joni D. Nelson, (Medical University of South Carolina), Amy B. Martin, Justin B. Moore, Christine E. Blake, Mindi Spencer

Background. Because of persistent effects of early childhood caries and impacts of dental health professional shortages areas, the integration of oral health in primary care settings is a public health priority. In this study, we explored oral health interprofessional practice (OHIP) as an integrative pathway to reduce oral health disparities. OHIP can include performing oral health risk assessments, describing the importance of fluoride in the drinking water, implementing fluoride varnish application, and referring patients to a dental home. Using implementation science, we conducted a formative evaluation analysis of 15 pediatric primary care practices to understand the adoption of oral health interprofessional practices (OHIP) in pediatric settings. Methods. Using McLeroy's ecological framework, we conducted a qualitative process evaluation to measure the factors that inhibited and facilitated adoption of OHIP into pediatric settings. A total of 15 CHIPRA pediatric practices participated in this study. Practices were located across 13 South Carolina counties. Outcomes of interest were the facilitators and challenges of OHIP adoption into pediatric primary care practices. Document review analysis and qualitative interviews were conducted with pediatric practices to contextualize OHIP adoption. Results. Thematic analysis revealed challenges for OHIP adoption including limited resources and capacity, role delineation for clinical and administrative staff, communication, and family receptiveness. OHIP training for clinical practitioners and staff and responsiveness from clinical staff and local dentists were facilitators of OHIP adoption. Twelve key recommendations emerged on the basis of participant experiences within OHIP, with developing an active dental referral network and encouraging buy-in from clinical staff for OHIP adoption as primary recommendations. Conclusion. We demonstrated the effectiveness of a learning collaborative meeting among pediatric primary care providers to adopt OHIPs. This work reveals an actionable pathway to support oral health equity advancement for children through an additional access point of preventive oral care, reinforcement of positive oral health behaviors, and interaction between parent and child for overall health and wellness of the family.

Presenting Author: Joni D. Nelson

CAUSALITIES IN AN INVISIBLE WAR: VIOLENCE, EPIDEMIOLOGY, AND POLITICAL ECONOMY ALONG THE US-MEXICO BORDER Auston Stiefer, (University of Oklahoma)

National headlines in 2017 sensationalized the increasing violence of the "Mexican Drug War" and prompted many academic commentaries attempting to contextualize these current events by focusing on the history of US-Mexico relations. However, an interdisciplinary analysis of the mortality caused by narcotrafficking violence has yet to be developed. Specifically, gun violence has remained conspicuously absent from national public health publications because of the Dickey Amendment's prevention of the CDC from studying gun violence as a public health threat to hinder these studies from impacting the promotion of gun control. Despite this amendment, public access crime statistics available online suggest that incidents of such violence exhibit epidemiological patterns similar to those of communicable disease. In 2009, however, the CDC did develop a public health framework for analyzing violence in urban city environments after reviewing the history of violence as a public health threat in the 20th century. This research project integrates various public health and anthropological frameworks to analyze violence as an epidemic unequally distributed among those living along the US-Mexico border. Data from the city of Tijuana-San Diego, considered the largest border town on the US-Mexico border, was used as a case study to study this narcoviolence. In border towns like Tijuana-San Diego, the political boundary becomes blurred when analyzing violence, culture, and populational health. In this space of interlinked economic exchanges and human migrations, narcoviolence is committed by drug trafficking organizations operating as capitalistic enterprises seeking to monopolize unregulated illicit markets. Primary quantitative statistical data for violent crime reports from 2006-2016 was analyzed and accessed from the public-access databases from the city governments of San Diego and Tijuana and the state governments of California and Baja California. Qualitative historical, economic, and anthropological research on current narcotrafficking in Tijuana-San Diego was used to contextualize the numerical crime data to characterize narcoviolence as a transnational epidemic and analyze it from established public health frameworks. This research integrates various research methods to establish a more holistic and inclusive model of interdisciplinary population health research. By defining narcoviolence in these public health and economic terms, and contextualizing it in historical and anthropological perspective, this research questions the efficacy of the upheld policy models which seek to dichotomize the US and Mexico and diminish the interconnectivity of addiction, economics, and mortality that are indiscriminate of political borders. Likewise, the results of this study prompt health policy changes for addiction and rehabilitation services, establish deaths caused by gun violence as a health disparity for the Hispanic and Latino/a population in the US, and proposes the US's role in the escalation of narcoviolence by its militarization of Mexican police forces in the 20th century.

Presenting Author: Auston Stiefer

PREPING FOR THE FUTURE: A MULTI-COUNTRY COMPARISON OF KNOWLEDGE, ACCEPTABILITY, BARRIERS, AND FACILITATORS
Adedotun Ogunbajo, (Brown University)

Pre-exposure prophylaxis (PrEP) is an HIV prevention tool that has the potential to inhibit the acquisition of HIV among seronegative users. Currently, PrEP is approved in a pill form (known as Truvada). The regimen is designed to be taken daily and if adhered to, is reportedly effective at reducing the risk of acquiring HIV by more than 90 percent. Men who have sex with men (MSM) are disproportionately affected by the HIV epidemic, and while they stand to benefit immensely from a biomedical intervention such as PrEP, uptake remains considerably low. A mixed methods study aiming to compare PrEP knowledge, acceptability of use, and possible barriers/facilitators for MSM is underway in Kenya, Ghana, and the United States. In Kenya, a detailed socio-behavioral assessment was conducted and consisted of 571 MSM. In this study, participants were recruited from nine of the country's western communities. Additionally, in Ghana, 22 focus groups with "peer yasss" social networks of MSM were drawn from three geographic communities in Ghana (Accra, Kumasi, Manya Krobo). The U.S. sample of participants was drawn from a group of recent western and eastern MSM migrants from African countries currently living in New York City. This talk will explore this study and its findings, and will situate them within existing and potential clinical and policy interventions to address HIV/AIDS.

Presenting Author: Adedotun Ogunbajo

SOCIODEMOGRAPHIC AND TEMPORAL VARIATION IN METABOLICALLY-HEALTHY OBESITY AMONG U.S. ADULTS (1988-2015) Iliya Gutin, (University of North Carolina-Chapel Hill)

Background: There has been growing debate over the existence and significance of 'metabolically-healthy obesity' (MHO), as research finds cardiometabolic health among many obese individuals is on par with, or even better, than their non-obese counterparts. Pro-MHO advocates contend that weight status is a poor measure of health risk, misclassifying a substantial portion of adults as "unhealthy". On the contrary, opposing evidence shows that – in the long-term – obesity nevertheless increases risk of early-onset disease and/or premature mortality. This debate is important as it raises questions about public health policies/strategies/interventions targeting cardiometabolic health, especially as studies suggest weight loss is unattainable or unsustainable for the majority of adults. Do we directly target weight, with 'BMI-focused' policies? Or do we instead target weight-related risks, with 'biomarker-focused' policies? Indeed, many argue that obesity is only a 'diseased' state when it reflects cardiometabolic dysregulation. Even in defining MHO there is uncertainty over which measures to use, as most definitions rely on clinical criteria for what we expect a cardiometabolically healthy profile to resemble, rather than examining actual population-level variation. Thus, critical to this discussion is a better understanding of how weight and cardiometabolic markers are clustered within the population, and how they are associated with early death. Further, extant research promotes biological explanations for observed variation in healthy/unhealthy obesity, neglecting social determinants of health and disease that contribute to these differences. While a strictly biogenetic explanation implies randomness in the distribution of MHO across population subgroups and over time, differences in individuals' access to health-promoting resources suggests that the observed variation is socially-patterned, reflecting variation in individuals' ability to remain healthy despite being obese. These differences are driven by structural process as defined by (a) individuals' 'ascribed' or 'attained' characteristics, such as gender, race/ethnicity, socioeconomic status; and (b) societal capabilities, such as medical knowledge/innovation/technology, as reflected in period and/or cohort effects. Objectives and Methods: The primary objectives are to: (1) identify different profiles of weight and health based on over 20 measures of weight, anthropometry, and cardiometabolic indicators; (2) estimate their association with premature mortality; (3) examine sociodemographic differences in the prevalence of these profiles; (4) examine temporal differences in prevalence; and finally, (5) examine sociodemographic and/or temporal differences in the relationship between these profiles and premature mortality. Data come from National Health and Nutrition Examination Survey (1988-2014) linked to restricted-use mortality records through December 31st, 2015, which should be available by Spring 2018. I will use Latent Class Analysis, and other clustering methods, to identify profiles of weight and health in the U.S. adult population, and their sociodemographic composition. Preliminary results suggest at least six distinct profiles of weight and health, with significant sociodemographic differences in membership. I will then use these classes in a multivariate survival analysis framework to examine their association with mortality. Restricted detailed cause of death data allow me to focus on metabolic and weight-related diseases. Finally, I will analyze sociodemographic variation in the relationship between these classes and mortality, as well as temporal variation in mortality (e.g., Age-Period-Cohort models).

Presenting Author: Iliya Gutin

LONG-TERM ASSOCIATIONS BETWEEN PRENATAL MATERNAL CORTISOL AND CHILD NEUROENDOCRINE-IMMUNE REGULATION

Jenna Riis, (University of California, Irvine), Jenna L. Riis, Douglas A. Granger, Han Woo, Kristin Voegtline, Janet A. DiPietro, Sara B. Johnson

Introduction: Understanding the impact of early-life stress on child neuroendocrine-immune (NEI) functioning is key to elucidating the biological mechanisms of population health disparities. Despite widespread recognition of the link between early-life adversity and disease risk across the lifespan, the impact of prenatal stress on fetal NEI development has rarely been examined in humans. This study examined whether prenatal maternal hypothalamic-pituitary-adrenal (HPA) activity moderates child NEI relations and explores the consistency of this moderating effect across gestation. We hypothesized prenatal HPA activity moderates child NEI relations and these relations are stronger among females than males. **Methods:** Pregnant women participated in five prenatal study visits at three-week intervals from 24–38 weeks gestation. At each visit, women provided a saliva sample and completed questionnaires. Maternal-fetal pairs were re-contacted for a follow-up study when children were age 5. The study sample consists of 45 mother/child pairs with prenatal and child data. In the follow-up study, children (mean age 64 months; female n=25) provided a saliva sample and completed behavioral assessments. Mothers (82% white; mean age 32 years) provided child health information and completed psychological assessments. Prenatal maternal saliva samples were assayed for cortisol ($\mu\text{g/dL}$). The mean cortisol concentration across all prenatal visits and cortisol determinations from each visit were examined as indices of prenatal HPA activity. Child saliva samples were assayed for cortisol ($\mu\text{g/dL}$) and cytokines (IL-1 β , IL-6, IL-8, TNF α ; pg/mL) as indices of HPA and inflammatory activity, respectively. Covariates included: maternal pre-pregnancy body mass index, parity, and age during pregnancy, and child age and maternal depressive symptoms (Center for Epidemiologic Survey Depression Scale) at the 5-year visit. **Results:** Multilevel mixed models for child cortisol revealed that, among males, average prenatal cortisol did not moderate child NEI relations nor was it associated with child cortisol levels. By contrast, among females, there were modest effects suggesting average prenatal cortisol moderated child NEI relations (for IL-1 β : $z=1.95$, $p=.05$; IL-6: $z=2.41$, $p<.05$; IL-8: $z=1.73$, $p=.08$). Average prenatal cortisol was also inversely associated with child cortisol among females only (z 's=-2.84- -2.55, p 's<.05). The relations between prenatal cortisol and child HPA and NEI functioning varied across pregnancy for female children. Cortisol during later pregnancy (weeks 30-32 and 36-38), but not earlier pregnancy, was inversely associated with child cortisol levels (z 's=-4.35 -2.84, p 's<.01). Cortisol during later pregnancy was also associated with moderation of child NEI relations, with moderation effects found at or after 30-weeks gestation for most cytokines (trend-level and significant effects: z 's=2.21- 3.04, p 's= .09- <.05). **Discussion:** We found relations between child inflammatory and HPA activity in saliva varied by maternal prenatal cortisol among girls but not boys. Higher prenatal cortisol was also associated with lower cortisol levels in five-year old girls. The findings suggest prenatal HPA activity may moderate child NEI functioning by altering HPA activity and the sensitivity of inflammatory processes to cortisol's inhibitory effects. This desensitization may increase disease risk and contribute to population health disparities, particularly for inflammation-related diseases such as asthma, depression, and cardiovascular disease.

Presenting Author: Jenna L. Riis**PROJECT ACTIVE: PRELIMINARY RESULTS OF A PERSONALIZED PREVENTION CLINIC** Ebony Scott, (New York University School of Medicine), Melanie Applegate, Mirtala Sanchez, Scott Braithwaite

Background: Evidence-based preventive care in the United States is underutilized, although preventable morbidity and mortality is substantive. Further, health disparities are worsened due to unequal distribution of preventive care. Personalization and prioritization is essential for successful preventive care implementation. Project ACTIVE is a clinical randomized control trial (RCT) of the effectiveness of a previously piloted intervention to personalize care and activate healthful behavior change for patients at high risk of premature morbidity and mortality. The intervention is compatible with emerging care models including the patient-centered medical home model and applicable to diverse care settings. **Purpose:** The purpose of this RCT is to evaluate the effect of a clinical intervention prioritizing and personalizing preventive care recommendations. Our hypothesis is that Project ACTIVE will increase overall estimated life expectancy and reduce unfulfilled clinical goals by at least one compared to usual care. **Methodology:** The Project ACTIVE intervention involves 6 study visits over the course of 9 months in addition to regularly scheduled primary care visits. These visits were divided into two parts: First, a validated mathematical model based on the USPSTF recommendations was utilized to quantify and rank the estimated amount of health benefit that would arise from improved adherence to each preventive care guideline. These results were communicated by providing personalized estimates graphically to participants. The nurse practitioner engaged the participant in a shared decision making process in which the participant identified which preventive health goals he or she aimed to achieve. Second, a health coach met with the patient to set personalized action steps to be completed by the next study visit, congruent to these goals. The health outcomes of the intervention participants were compared to a control sample of patients who did not receive the clinical intervention. English or Spanish speaking non-elderly non-pregnant adult patients in care were recruited and consented. Outcomes were (1) estimated life expectancy, based on the validated mathematical model; and (2) change in unfulfilled clinical goals, based on applicable USPSTF guidelines of grade A or B. Number of unfulfilled clinical goals were evaluated in a blinded fashion and in duplicate by clinicians who were not involved in delivering the intervention. **Results:** 140 patients were recruited and consented. Preliminary results demonstrate that the participants who have completed the intervention accomplished an average of 21.04 months estimated gain in life expectancy compared to 4.52 months estimated gain in life expectancy by the control participants. Thus far Project ACTIVE seems to be delivering its benefit by improving the control of hypertension, hyperlipidemia, tobacco and alcohol use, depression, diet and exercise, colorectal and breast cancer screening, and aspirin use. Numbers are currently insufficient to permit evaluation of the statistical significance of these trends, but evaluation will occur following the trial's completion in June 2018. **Conclusions/Implications for Practice:** It is feasible to implement a program that enhances personalized and patient-centered preventive care at a busy inner-city ambulatory care clinic. Preliminary results suggest that this program, associated with improved health outcomes, and may be expanded to other similar settings.

Presenting Author: Melanie Applegate

RACE AND CONTEXTUAL VARIATION IN EDUCATION'S HEALTH EFFECT Michael Esposito, (University of Washington, Department of Sociology)

Neighborhood environments structure experience. One's immediate spatial context shapes an array of social (e.g., social networks), environmental (e.g., exposure to toxins), and institutional (e.g., access to public goods) features. Among the mixture of outcomes associated with spatial context, health is one of the most conspicuous. Due to their effects on the aforementioned features, neighborhood environments have been shown to have pronounced effects on various physical and psychological health outcomes. As insightful as the health ~ f(neighborhood context) literature has been, there is still room for improvement. Most of the work here has treated individual-level traits as nuance parameters, to be averaged over. While this strategy is useful, it ignores heterogeneity in how individuals experience the same spaces--and thus potential heterogeneity in the protective effects of contextual environments. Our understanding of for whom neighborhood environments are most/least effective in warding off poor health is limited. Of the many features that may affect how context protects against health decline, education is prime. Indeed, education is a powerful predictor of health; individuals with greater levels of education have better health outcomes due--ostensibly--to the host of cognitive, meta-cognitive and material resources that education provides. The relationship among education and health is unique, in that many of the resources that propagate this relationship are embedded within the individual; individuals with more education are thus able to call upon a resource to protect against various health problems, regardless of the context in which they exist. The above suggests an interaction between education, residential context, and risk of poor health. That is, contextual environments may have the largest effect on the risk of various poor health outcomes for individuals with lower levels of education. Put differently, individuals with greater educational attainment may be less reliant on contextual features to protect their health, given the embedded, salubrious resources that educational attainment provides. Lacking these internalize resources, individuals with lower levels of educational attainment may be more subject to the immediate external resources available to them to ward off poor health. This interaction--among personal educational attainment, context, and health--may be particularly important for understanding health among Non-Hispanic Black individuals, for whom the positive association among education and salubrious residential traits is decoupled, relative to Whites. (I.e., because of residential segregation, Blacks with higher levels of education often find themselves in neighborhoods that have fewer health-protective neighborhood resources than similarly educated Whites). Education may be an especially important resource for Blacks to protect against poor health, in a social structure that systematically bars them from otherwise health-protective contextual resources. In this project, using Bayesian multilevel models and data from the National Longitudinal of Adolescent to Adult Health, I examine how neighborhood environments intersect with education to produce variable risk of poor health. I will examine: (1) how the association between education and cognitive decline varies by Census-tract; (2) what specific tract-level features (or combination of features) enhance/limit education's role in influencing cognitive diseases; and (3) whether racial differences exist in how this interaction manifests.

Presenting Author: Michael Esposito

UNDER PRESSURE: SALIVARY CORTISOL, PSYCHOSOCIAL STRESS, AND TYPE 2 DIABETES IN FIVE AMERICAN INDIAN COMMUNITIES Melinda Dertinger, (University of Minnesota Medical School, Duluth Campus), Melissa Walls, Ben Aronson, Melanie McMichael

Background: Many American Indian (AI) communities experience significant health inequities, including type 2 diabetes (T2D). Disease onset, progression, and complications of T2D for AIs are worsened by disproportionate exposure to psychosocial stressors. Although much research has examined the effects of stress on T2D complications, there is very little known about how stress affects these processes in AI populations. The current study describes feasibility and compliance to a community-based salivary cortisol collection protocol in 5 tribal communities. We also explore potential confounding factors and correlates of cortisol patterns, the latter of which include psychosocial stressors identified by AI community members. Methods: The Maawaji' idi-oog Mino-ayaaawin (Gathering for Health) study is a community-based participatory research (CBPR) collaboration between the University of Minnesota (UMN) and five Anishinaabe (Ojibwe) communities in the upper Midwestern US. Clinical staff at each participating medical facility generated lists of possible participants using random sampling techniques. Inclusion criteria were a diagnosis of diabetes within 5 years of the sampling data, 18 years of age or older, and self-identified as AI. Data were collected from three sources: 1) Computer-Assisted Personal Interview (CAPI) surveys; 2) medical chart reviews, including lists of relevant prescribed medications, collected by clinical staff; and 3) salivary cortisol levels, self-collected from participants at home. Participants collected salivary samples four times throughout the day to capture their diurnal pattern. At the time of each sample collection, participants also completed the Subjective State Scale (SSS) to assess their environment, behavior, and subjective feelings of stress. This procedure occurred in four waves at 6-month increments. Results: A total of 194 AI participants (109 females) with T2D ranging in age from 18-77 years (M = 46.32) were involved in baseline data collection. Participants adhered closely to salivary cortisol protocol collection requirements. As expected, individual cortisol indices were quite variable between participants, but most demonstrated a healthy diurnal pattern (a rise after waking and gradual decrease throughout the day). Consistent with other research, waking value was the only index that significantly varied by gender, with men (M = 9.42 nmol/L) showing higher values than women (M = 7.26 nmol/L). Waking cortisol values were significantly positively associated with AUCg values ($r = .42, p < .001$), suggesting that these values are a useful indicator of total daily cortisol output. Smoking was the only self-reported temporal behavior that seemed to influence sample values: smoking was positively associated with waking cortisol values ($r = .23, p < .01$). Very few chronic stressors were associated with baseline cortisol indices. We expect that chronic exposure to stress will be linked with intra-individual variation over time, rather than inter-individual differences at baseline; preliminary findings for longitudinal data will be presented. The influence of medications on cortisol indices will also be presented. Conclusions/Implications: Findings demonstrate the feasibility of using at-home collection procedures to measure cortisol as a stress biomarker. The findings will also allow us to determine how chronic illness and stressors may influence cortisol activity over time, and examine both intra- and inter-individual differences in responses to stress.

Presenting Author: Melinda Dertinger

SOCIOECONOMIC STATUS, FINANCIAL STRESS, AND AMERICAN INDIAN HEALTH Melissa Walls, (University of Minnesota Medical School, Duluth campus), Kelley Sittner, Dane Hautala, Melanie McMichael

Socioeconomic status (SES) is a fundamental cause of disease and a critical agent in creating health inequities. Despite widespread attention to the role of SES as a health determinant at the population level, the health impacts of SES factors like income and related dimensions of financial stress in areas of concentrated economic disadvantage are unclear. Many American Indian (AI) reservations were initially and intentionally situated in rural, low-resource areas of the United States. The social, political, and economic stress resulting from this context exists simultaneously with rich cultural and communal strengths. We investigate how various indicators of SES and financial stress relate to quality of life in five reservations with a sample of adults living with type 2 diabetes. Such work is needed to advance understanding of the complex interplay of race, SES and health for disadvantaged groups. Methods: Data are from Maawaji' idi-oog Mino-ayaawin (Gathering for Health), a mixed-methods, community-based participatory research (CBPR) collaboration between the University of Minnesota and five AI communities. The study involved 2 phases: 1) qualitative data collected via focus groups, and 2) longitudinal quantitative data from computer-assisted personal interviews (CAPI), salivary cortisol samples, and clinic-based medical chart reviews with 194 AI adults diagnosed with diabetes. We present findings from phase 1 and the CAPI portion of the project; the latter includes results from 162 participants in waves 1 - 2. Dependent variables are quality of life (QoL) and diabetes-related QoL. Independent variables include financial stress (i.e., family financial strain, negative financial events, financial food insecurity), SES (i.e., income, education), and relevant control variables (i.e., age, gender, on/off reservation). We conducted lagged bivariate and multivariate analyses between financial indicators at Wave 1 and QoL at Wave 2 to explore the associations between SES, financial stress and quality of life. Results: Bivariate Results: Income and education were modestly correlated with QoL; only income was associated with diabetes-related QoL. Family financial strain and financial food insecurity were negatively associated with both QoL outcomes. Financial events were negatively correlated with diabetes-related QoL only. All financial stressors were significantly and positively correlated with each other and negatively correlated with family income. No financial stress measures were correlated with education. Multivariate Results: Income and education were positively associated with QoL, controlling for age, gender, and on/off reservation location; the income effect dissipated after accounting for financial stressors. Family financial stress was associated with lower QoL; these effects dropped to marginal significance after accounting for financial food insecurity. Financial food insecurity had the strongest association with and explained the largest proportion of variance in QoL. Family financial stress was linked to lower diabetes QoL across models. Conclusions: Results demonstrate differential returns of education on QoL for AIs relative to what has been observed in general population studies. Various indicators of financial stress are linked to reduced QoL (general and diabetes-specific); however, family-specific financial stressors (as opposed to individual experiences) represented the most consistent predictor across models. Quantitative findings will be contextualized with community qualitative excerpts from community focus groups.

Presenting Author: Melissa L. Walls

THE URGENCY OF ALGORITHMIC FAIRNESS, ACCOUNTABILITY AND TRANSPARENCY IN HEALTH CARE Norma Padron, (Thomas Jefferson University)

As Jim Gray observed the first, second and third paradigms of science –empirical, analytical, and simulation –have successfully carried us to this point in history. The next wave of innovation and breakthroughs will come from data-driven science. Indeed, we are at the cusp of the fourth paradigm, increasingly grasping the power of data-intensive science and with this, its opportunities and challenges as we move away from hypothesis-driven to data-driven science. Among these challenges is the realization that algorithmic design and the data used for it may have profound societal implications across dimensions such as fair housing, economic opportunity and discrimination. As we enter this fourth paradigm it is vital to ask questions such as: are racial minorities less likely to find housing via algorithmic matching systems? Does algorithmically-controlled personalization systematically restrict the information available to the economically disadvantaged? Are content recommendations steering us away from decisions we would like to make? And, do online markets unfairly make goods more expensive for particular demographics or particular geographic locations? In the context of health care, with algorithms that require highly dimensional patient data to make precise diagnoses and treatment options, we begin to ask whether populations in less participatory cultures be “information-poor” in this new system? The intricate institutional and regulatory aspects of health care make it a particularly complex environment, which underscores the urgency to develop an open framework and tools to codify clinical practice guidelines, prediction and decision support algorithms, that decisively engage in multidisciplinary evidence generation and transparency and that extend into policy design and implementation in order to avert the potential harms from data and algorithmic bias. One of the key challenges in understanding and addressing bias is that there are multiple, different categories of bias and definitions, many of which are context-specific. In statistics, bias simply refers to an estimate's deviation from a statistical standard. As algorithms are used to make automated decisions or as input to decisions made by people, other standards become important to prevent moral bias, regulatory bias, social bias, psychological bias and others. Crucially, the same algorithmic processes can be biased according to one standard, but not according to another. The main goal of this discussion article is to outline strategies for active and engaged collaborative design and prototyping of a set of digital tools and frameworks that can aid the understanding, assessment, measurement and solutions for the types of biases that can be most commonly encountered in the data and algorithms used in the context of the health care industry INNOVATION: In the specific context of health care both the societal value of using big data and the risks are exacerbated given the stakes and state of fragmented data infrastructure. Some of the potential factors that may give rise to algorithmic bias in health care delivery when using electronic health records (EHRs) will not be resolved through sheer sample size or even through achieving data interoperability. Furthermore, because big data are oftentimes integrated from multiple sources, the biased view of the data collected at each different site often leads to biased decisions or models.

Presenting Author: Norma Padron

FRAMING CLIMATE CHANGE IN TERMS OF RESILIENCE AND PREPAREDNESS FOR SENIORS IN LOWER SOCIOECONOMIC, URBAN SETTINGS TO ADDRESS SOCIAL INEQUALITIES Julie Becker, (University of the Sciences in Philadelphia), Teresa Mendez-Quigley, MSW

In the next several decades, the greatest threat to human health is climate change, forcing people to adapt to a changing environment. Climate change is often considered an abstract concept, with few tangible ways to link the outcomes of the events to human health. The need to reframe climate change into something real and addressable is crucial, especially among vulnerable populations like seniors, because they have diminished capacity to thermoregulate their bodies, may be socially isolated, face economic and social inequities, and have co-morbid health conditions that influence negative health outcomes and limit mobility. Using principles of resilience thinking and emergency preparedness, the purpose of this project is to prepare an urban, economically underserved senior population in Philadelphia for climatic changes that may affect their health. Resilience thinking includes the capacity to absorb environmental disruption, and change or adapt in order to retain similar function. Preparedness involves being able to implement that change or adaptation to that disruptive situation. Methods: Using an educational curriculum previously developed and pilot-tested in similar sites, we utilized a strategy of teaching seniors to prepare for Philadelphia's changing climate (hotter and wetter) and increase their resilience to extreme weather events. The curriculum included: climate overview, extreme weather events with examples, connections between climate change and health, and adaptation strategies that focus on resiliency and preparedness, as well as availability of local resources within one's neighborhood. Results: A total of 279 seniors (average age 75) voluntarily participated in the program at 10 senior centers throughout Philadelphia, almost all in lower socioeconomic neighborhoods. Using pre and post tests, seniors demonstrated knowledge increases regarding: the connections between climate change and severe weather events; the effects of climate change upon health like increases in heart attacks during extreme heat or cold spells; and changes in Philadelphia's climate to a hotter, wetter environment. To improve resilience, seniors may benefit from improved nutrition (increasing the intake of fruits and vegetable – more frozen, not just fresh) and the use of local maps to locate resources (pharmacies and food sources) in case of weather emergencies. To improve preparedness, seniors need to maintain an updated list of their medications in an accessible place (example provided in the training) as well as keep supplies available like canned goods (with limited sugar and salt) and bottle water. Since the attendees to these programs face social and economic inequities, policies to provide additional food, water, and pharmaceutical supplies should be adopted by agencies providing services to seniors like Programs of All-Inclusive Care for the Elderly (PACE) under Medicare or even the Senior Centers to ensure both resilience and preparedness in the advent of climate change.

Presenting Author: Julie Becker

SOCIOECONOMIC TRAJECTORIES AND THE MENTAL HEALTH STATUS OF AFRICAN AMERICAN ADULTS Alexis Dennis, (University of North Carolina at Chapel Hill), Alexis C. Dennis, Julie Olson, Robert A. Hummer

BACKGROUND: Research consistently demonstrates that high socioeconomic status (SES) is related to favorable mental health among the U.S. white population. Yet, research examining SES and mental health among African Americans has yielded mixed results. The majority of studies focusing on African Americans utilized conventional, static measures of adult SES (i.e., education, income, occupation). Adult SES, however, is a dynamic process that unfolds over the life course. Many studies have overlooked how unconventional SES indicators (i.e., student loan debt), and child and emerging-adulthood SES indicators that differ from but are related to adult SES indicators, influence African American adults' mental health. This study aims to address these gaps. Specifically, we assess how dynamic socioeconomic processes unfold across the life course and shape African Americans' mental health outcomes in adulthood. **DATA AND METHODS:** We follow a weighted sub-sample of African Americans (n=413) from Waves 1, 3, 4, and 5 of The National Longitudinal Study of Adolescent to Adult Health (Add Health). To date, we have applied latent class analysis to determine the appropriate number of SES groups at Waves I, III, and IV, using traditional SES indicators and other life course appropriate SES measures from each wave. We plan to use latent transition analysis (LTA) to evaluate the likelihood that respondents move from a given class at Wave I to another at Waves III and IV. In doing so, LTA will produce a categorical variable of life course SES, which we refer to as "socioeconomic trajectories." Using logistic regression, we will predict risk for depression and anxiety (diagnosis and medication use) at Wave 5, when respondents are ages 32 to 42, by socioeconomic trajectory. **PRELIMINARY RESULTS:** A two-class solution best fit the data at each wave. Importantly, the class distributions varied by wave. At Wave I, most respondents (81%) grouped into a class characterized by more college-educated parents, less poverty, and both parents working full time. At Wave III, 34% of respondents grouped into a class characterized by high frequencies of college enrollment or completion, credit card debt, and student loan debt, and low frequencies of poverty and support from parents. At Wave IV, 38% of respondents grouped into a more advantaged class characterized by higher frequencies of college enrollment or completion, fulltime work, homeownership, positive net worth, and giving financial support to parents. Respondents who were disadvantaged at Waves 1, 3, or 4 reported higher frequencies of diagnosis for depression or anxiety at Wave 5 (29%, 28%, and 31%, respectively) compared to more advantaged groups (25%, 21%, and 23%). Moreover, respondents who were disadvantaged at Waves 3 or 4 reported higher frequencies of current medication use for depression or anxiety at Wave 5 (10% and 9%, respectively) than advantaged respondents (7% and 5%). **POTENTIAL IMPACT:** This study advances theoretical and empirical understanding of how socioeconomic processes unfold across the life course to shape African American adults' mental health. Results will reveal points in the life course where intervening on African Americans' socioeconomic well-being could have downstream effects on adult mental health.

Presenting Author: Alexis C. Dennis

LESS AND MORE? EXAMINING THE RELATIONSHIP BETWEEN FOOD ASSISTANCE GENEROSITY AND CHILDHOOD WEIGHT STATUS

Megan M. Reynolds, (University of Utah)

SIGNIFICANCE Malnutrition-related health conditions among children are commonly regarded as a problem of developing nations. Yet, here in the United States about 35% of children below the federal poverty rate are either underweight or obese. Supplemental Nutritional Assistance Program (SNAP) should reduce rates of malnutrition-related outcomes among the poor by intervening on three primary mechanisms linking poverty to malnutrition: food insecurity, financial hardship, stress. Yet, little attention has been paid to how features of the SNAP program, other than the timing of benefit receipt, might affect health in interaction with individual SNAP participation. What research does exist has been severely limited by the following factors: (1) it has examined the extensive margin of program alone, neglecting the intensive margin of program generosity (2) it has focused on only one level (e.g. - state, person); and (3) it has relied upon cross-sectional data. In combination with three waves of individual-level data on children age 5-18, we exploit exogenous variation at the state-level to determine whether SNAP generosity modifies the effect of SNAP participation on the probability of being underweight or obese. **METHODS** Data. Our individual-level data come from the Child Development Supplements of the Panel of Income Dynamics (PSID). Aged 0-12 years in 1997, these children of PSID sample members were surveyed roughly every five years through 2007. The total number of observations over the study period is just over 8,093, representing 3,563 children. We drew state-level data from the State Welfare Generosity Index, a decomposable index of state welfare generosity capturing state policy variation across four programs (TANF, SNAP, Unemployment Insurance and Medicaid/CHIP) and two dimensions (eligibility requirements and benefit levels). Measures. Child weight status was determined using the Center for Disease Control (CDC) BMI-for-age gender-specific growth charts: underweight (BMI 95th percentile). SNAP participation is a dichotomous indicator based on the head-of-households or their spouses reported receipt of SNAP benefits during the previous calendar year. SNAP generosity is scored on a scale of 0-100, with more generous states receiving higher scores. Covariates include sex, race, age, head-of-household years of education and household income adjusted for family size. **Estimation.** We conducted multivariate logistic regressions estimating the odds of being underweight and of being obese. We include adjustment for the clustered nature of data and the complex survey design. **PRELIMINARY RESULTS** Controlling for a variety of demographic and socio-economic factors, the interaction effect for SNAP participation and generosity is negatively signed in the case of underweight and positively signed in the case of obesity. Marginal effects plots of SNAP participation based on SNAP generosity indicate a significant negative effect of SNAP participation on underweight risk above (but not below) mean SNAP generosity. While a positive effect of SNAP participation on obesity risk appears with above-average levels of SNAP generosity, this effect is not statistically significant.

Presenting Author: Megan M. Reynolds**ROLE OF SOCIAL AND CLINICAL DETERMINANTS IN FREQUENT UTILIZATION OF EMERGENCY DEPARTMENTS**

Maliha Ali, (George Washington University), Melissa McCarthy

Objective: Frequent utilizers of EDs (FUEDs) utilize Emergency Department (ED) services at least four times/year, comprise less than 10% of ED patients but account for a quarter of ED visits. FUEDs comprise a high-cost-high-need vulnerable group of patients with multiple chronic diseases and poor health outcomes. Through application of the WHO CSDH Framework, this research sought to characterize the care utilization of FUEDs and elicit the influence of specific social and clinical determinants upon total and preventable ED utilization. **Study Design:** Analysis of claims data merged with interview data from an urban hospital's Frequent User Study was used in a retrospective cohort study design. We applied negative binomial regression to estimate patient level effects upon (i) total ED visits (ii) preventable ED visits. Independent variables included indicators of social and clinical determinants. **Population Studied:** 474 DC Medicaid beneficiaries, 18-64 years, who attended the hospital between October 2015 – 2016 and attended any ED 3 or more times in the past 1 year. **Principal Findings:** In one year, FUEDs had an average of 16.2 total ED visits and 30% of ED visits were preventable. People with mental illness had more ambulatory care visits (mean 11, SD 9.3) compared to FUEDs without. 60% of FUEDs had a diagnosed mental illness but there was significant under-utilization of psychiatric evaluation and management (mean 1.2, SD 4.4). Multivariate analyses revealed that increased physical illness severity, poor behavioral health status, inadequate food and shelter were associated with increased number of total and preventable ED visits. Increased levels of social support were associated with a decrease in total (IRR 0.94) and preventable (IRR 0.86) ED utilization. Physical illness severity and care continuity (CC) had a significant positive interaction effect upon ED utilization. FUEDs whose CC could not be assessed due to inadequate ambulatory care (<3 visits/year) had the greatest ED utilization. **Conclusion:** Addressing inadequate access to food and shelter and providing social support could reduce the number of preventable ED visits and further leverage the benefits due to care continuity in FUEDs with multiple physical and behavioral health conditions. **Policy Implications:** This research is directly applicable to DC Medicaid Care Coordination initiatives whereby patients with multiple chronic illnesses can receive a care coordination benefit. Curbing ED use by FUEDs will require a two-pronged approach: adequate and coordinated ambulatory care for those most at risk as well as attention to specific social determinants they experience.

Presenting Author: Maliha Ali

A 10-YEAR COST-EFFECTIVENESS SIMULATION STUDY OF A NOVEL APPROACH TO WEIGHT GAIN PREVENTION IN YOUNG ADULTS: THE SNAP INTERVENTION Natalie R. Smith, (Department of Health Policy and Management, UNC Chapel Hill), Deborah Tate, Rebecca Nieberg, Mark A. Espeland, Rena R. Wing

Introduction Young adults experience significant weight gain which can track into adulthood and increase chronic disease risk and economic costs. Intervening in young adulthood and preventing early weight gain is therefore critical to improving health across the life course and has the potential to reduce later-life health disparities. The Study of Novel Approaches to Weight Gain Prevention (SNAP) investigated two weight gain prevention interventions in young adults. The interventions focused on self-regulation in combination with daily small- or periodic large- changes to health behaviors (e.g., increase steps by ~2000 per day vs. exercising for 250 minutes per week). Over an average follow-up of 3 years the SNAP large-changes intervention reduced average weight gain and obesity incidence compared to both the small-changes intervention and control group. Given these results, healthcare payers may be interested in implementing the SNAP large-changes intervention in young adult populations. This work investigated whether the SNAP large-changes intervention was cost-effective over 10 years when compared to the SNAP control group from a healthcare payer perspective. The findings will add to a limited literature examining the economic impact of prevention in young adults and help healthcare payers understand potential outcomes of intervention implementation. **Methods** This study used a Markov simulation model, a common approach to simulate cost-effectiveness of chronic disease interventions. These models allow individuals to transition between discrete disease states according to pre-specified transition probabilities. We defined our states using standard BMI categories of normal weight, overweight, and obesity and derived 4 years of transition probabilities from SNAP's weight check-in data. For years 5-10, the control group was assumed to continue transitioning according to year 4 probabilities. The intervention was assumed to be half as effective in year 5 and return to year 4 control probabilities for years 6-10. We retrospectively calculated intervention delivery costs and derived healthcare costs for normal weight, overweight, and obese individuals from published literature. We simulated 1,000 normal weight (500) and overweight (500) young adults over 10 years. The primary outcome was individual cost per year of overweight or obesity prevented. Sensitivity analyses were conducted by modifying the starting cohort and costs. Costs were inflated to 2017 dollars and costs and outcomes were discounted by 3% each year. **Preliminary Results and Conclusions:** Over 10 years of simulation, the SNAP large-changes weight gain prevention intervention decreased total costs and improved outcomes over the control group. The intervention decreased the time spent in overweight or obesity by 10 months per person and decreased the cost per person by \$1,058. Sensitivity analyses varying input parameters were not substantially different from the baseline results but indicated that results were most sensitive to changes in the costs of normal weight, overweight, and obesity. This study provides preliminary evidence that prevention may be a cost saving way to improve health outcomes and that the SNAP large-changes intervention may be a worthwhile tool for healthcare payers to consider implementing for young adult populations in order to delay weight gain and associated costs and comorbidities.

Presenting Author: Natalie R. Smith

RURAL CHILDHOOD RESIDENCE AND CHRONIC PAIN AMONG MIDDLE-AGED ADULTS IN THE UNITED STATES Audrey R. Murchland, (University of California, San Francisco, Department of Epidemiology and Biostatistics), M. Maria Glymour, Elizabeth Whitlock, Elizabeth Rose Mayeda

Background: Mounting evidence reveals widening health disparities in the United States (U.S.), with declining life expectancies often attributed to “deaths of despair”. Chronic pain may play an important role in explaining these patterns. Lifecourse epidemiology suggests that childhood place of residence may be particularly relevant for health in adulthood, but few prior studies have linked geographic place of residence in childhood to mid-life chronic pain. We evaluated whether rural childhood residence was associated with chronic pain among Health and Retirement Study (HRS) participants and whether this association evolved across birth cohorts from 1942 to 1959. **Methods:** We included U.S.-born adults ages 50-57 years who enrolled in HRS in 1998 (birth cohorts 1942-1947), 2004 (birth cohorts 1948-1953), or 2010 (birth cohorts 1954-1959) (total n=7,989). Rural childhood residence (rural/non-rural) was based on self-report. We operationalized chronic pain as a participant reporting that they were often troubled with moderate or severe pain in two sequential biennial interviews, beginning at their enrollment wave. We used logistic regression, adjusting for alternative covariate sets (set 1: age, sex, race/ethnicity, birth year; set 2: set 1 plus southern birth, parental education; set 3: set 2 plus own education) and applying sampling weights to estimate the effect of rural childhood residence on odds of chronic pain in midlife. To evaluate cohort effects, we examined interactions between birth cohort and rural childhood residence. Additionally, for each model, we calculated the predicted probability of chronic pain at each exposure level using marginal standardization. **Results:** Mean age at enrollment was 53.2 years (range 50-57); 43.5% of the sample reported rural childhood residence. Across successive birth cohorts, prevalence of chronic pain increased (1942-1947: 12.1%, 1948-1953: 13.7%, 1954-1959: 18.2%). In age, race/ethnicity, and sex adjusted models, rural childhood residence was associated with prevalent chronic pain (odds ratio (OR) = 1.27; 95% CI: 1.10, 1.48); marginal predicted probability of chronic pain = 16.2% for rural and 13.2% for non-rural childhood residence. Additional adjustment for parental education and southern birth attenuated this association (OR = 1.19; 95% CI: 1.02, 1.39); marginal predicted probability of chronic pain = 15.7% for rural and 13.5% for non-rural childhood residence. After additional adjustment for own education, rural childhood residence was not associated with chronic pain (OR = 1.06; 95% CI: 0.91, 1.24); marginal predicted probability of chronic pain = 15.0% for rural and 14.3% for non-rural childhood residence. However, the estimated effect of rural childhood on chronic pain was modified by years of own education (interaction OR = 1.10; p-value = 0.001). We found no evidence of cohort differences in the estimated effects of rural childhood residence (OR close to null and p-value > 0.47 for all interactions). **Conclusions:** We found that rural childhood residence was associated with higher prevalence of chronic pain among middle-aged U.S. residents. Educational environment, both parental education and own education, appear to contribute to this disparity. Further research is needed to elucidate lifecourse pathways through which rural childhood residence may influence risk of chronic pain.

Presenting Author: Audrey R. Murchland

EDUCATIONAL GRADIENT IN LATER-LIFE TRAJECTORIES OF CHRONIC DISEASE: WHAT ROLE DO INCOME AND COGNITIVE ABILITY PLAY? Zhangjun Zhou, (The Pennsylvania State University)

Consistent with the theory of fundamental causes (Link and Phelan, 1995), the association between education and health and mortality has been well documented in the United States, and such relationship is argued to persist across time and place even if the mechanisms change (Link, 2008). Education provides individuals with material resources, psychological resources, and healthier lifestyles that reduce the risks of health problems and consequently improve one's health conditions (Ross and Wu, 1995). However, evidence is mixed on how early-life educational attainment is associated with different stages of disease and health problems at later life course. While educational attainment is significant in delaying the onset of chronic disease, less is known on whether the protective educational effect is consistent for predicting individuals' trajectories of deterioration in chronic conditions. Additionally, while some evidence supports that income mediates the educational gradient in the progression of physical health problems (such as functional limitations) (Herd, Goesling, and House, 2007), less is known on whether such effect is consistent in predicting the overall trajectory of chronic disease. This study plans to use individual growth model to examine the educational gradient in the trajectory of chronic diseases over time. It addresses three research questions. What is the individual trajectory of chronic diseases? Does the individual trajectory of chronic diseases at later life vary by early-life educational attainment? Does the educational gradient remain after controlling for later-life income and cognitive ability? The current study uses data from the Health and Retirement Study (1998-2012). The analytic sample is nationally representative of Americans aged 50 and above at 1998 (N=161,640 person-waves). The key dependent variable is respondents' reported total number of chronic conditions at each wave, including diabetes, stroke, hypertension, heart problems, cancer, lung problems, and arthritis. Results indicate that average aging Americans are on an upward trajectory of increasing number of chronic conditions over time, although significant between-person variations exist in terms of the initial status and rate of change. Significant educational gradient exists in the initial status of chronic conditions, net of individuals' sociodemographic, health status, and health behaviors. Compared to those without a high school diploma, high school graduates on average have 0.2514 ($p<0.001$) fewer chronic conditions at the beginning, and those with more than high school degree have 0.4782 ($p<0.001$) fewer chronic conditions. Additionally, educational attainment predicts the trajectories of chronic conditions. Those who have less than high school degree are on a significantly steeper upward trajectory than those with high school degree, while those with more than high school degree are on the least steep trajectory. After controlling for the effects of household income and cognitive functioning (measured by total word recall score) on both the initial status and rate of change, the significant educational gradient remains, though smaller. In contrast to previous literature, the current findings provide strong evidence that early-life educational attainment plays a significant and long-term role on the later-life deterioration in health problems, even after controlling for potential mechanisms such as material resources and cognitive functioning.

Presenting Author: Zhangjun Zhou

IDENTIFYING MORTALITY HOTSPOTS WITH SHARED UNDERLYING RISK FACTORS USING COUNTY-LEVEL MORTALITY DATA FOR 21 CAUSES OF DEATH IN THE UNITED STATES Andrew Stokes, (Boston University School of Public Health), Chunyi Zhang, Jason M. Collins, Katie M. Berry, Justin Rising, Laura Dwyer-Lindgren, Ludovic Trinquart

Research Question: Are there distinctive clusters of US counties that share similar mortality patterns across multiple causes of death? How are mortality hotspots associated with sociodemographic, behavioral, and metabolic risk factors? Significance: Clusters of mortality in the US population have been typically identified on the basis of patterns exhibited in all-cause mortality or specific causes of death considered in isolation. Considering all causes of death simultaneously may considerably enrich the identification of hotspots and shed light on counties that share broad patterns of mortality risk. Furthermore, establishing clusters of mortality risk in the population through an investigation of similarities in mortality across multiple causes of death may provide an avenue for systematically identifying the contribution of underlying risk factors. Methods: We used data on county-level mortality rates for 3,142 counties and 21 causes of death over the period 2010-2014 to identify shared mortality patterns. Mortality rates were age-standardized and included deaths occurring between the ages of 15-64 to capture premature mortality rates. A two-stage multivariate clustering approach using G-Means and K-Means++ clustering was used to partition counties into coherent groups based on multivariate mortality patterns. Clustering was performed on all 21 causes and on major subgroups, including non-communicable diseases (NCDs) and injuries. External data on county-level risk factor prevalence were used to identify factors associated with the estimated mortality patterns. Results: The two-stage multivariate clustering approach led to the identification of nine clusters (coded as Groups A-I) for NCD mortality in males. Cluster membership was strongly associated with county-level sociodemographic characteristics, including mean household income, educational attainment and race/ethnicity. For race/ethnicity, there were four non-Hispanic White majority (more than 80%) groups: A, B, C and H. Group I had the highest mean proportion of Black/African American, 50.0%. For behavior factors, including smoking, alcohol use, physical activity and obesity, the first four groups generally performed better than others. Group H had higher levels of behavioral risk factors than Group I, despite Group I's overall higher mortality levels, especially on heavy alcohol use (Group H: 25.4% vs. Group I: 19.4%). Conclusion: We developed an innovative approach to identifying major clusters of mortality variation within the US population and underlying risk factors that contribute to generating these disparities. Our findings indicate major heterogeneity in mortality risks and underlying risk factors across US counties.

Presenting Author: Andrew Stokes

PARTNERSHIPS TO ENCOURAGE ACTIONABLE CULTURES OF HEALTH (PEACH): AN RWJF SYSTEMS FOR ACTION STUDY Luke Sleiter, (NYC Department of Health and Mental Hygiene), Carl Letamendi, Rachel Dannefer

Coordination among health and community services are critical to improving health outcomes in the most marginalized neighborhoods. Through generous support from the Robert Wood Johnson Foundation, our Partnerships to Encourage Actionable Cultures of Health (PEACH) study evaluates how aligning a city health department with community stakeholders under a place-based model can improve health, reduce inequities and address social determinants across neighborhoods. PEACH investigates a co-located, cross-sectoral partnership and a shared decision-making governance structure between clinical and nonclinical partners, the city health department, frontline staff, and community-based organizations. Our electronic social needs referral and linkage system (NowPow) serves as a primary and novel mechanism to connect community members to clinical and social services that are tailored to their needs, which cultivates a cross-sector collaboration to improve health. We observe data on the impact that Action Center co-located partners and the NowPow system have on community health in East Harlem and the relative impact of this model in the community. Through application of RWJ's culture of health framework, cities across the country can take steps towards fostering a culture of health. Co-location, active referral management and a collective governance structure among partners at the East Harlem Neighborhood Health Action Center help to address social determinants of health and fosters a partnership which improves neighborhood health. Working with neighborhood partners and including them in a collective structure where ideas are exchanged and decisions are made can help to identify and address health disparities, meet service gaps and take steps towards achieving health equity.

Presenting Author: Carl Letamendi

BUILDING THE CASE FOR HOUSING POLICY: UNDERSTANDING PUBLIC BELIEFS ABOUT HOUSING AFFORDABILITY AS A KEY SOCIAL DETERMINANT OF HEALTH Selena E. Ortiz, (Department of Health Policy and Administration, The Pennsylvania State University), Bobbie L. Johannes

Research Objective: The current housing crisis in the U.S. calls for the consideration and promotion of policies that improve the circumstances of severe housing cost burdens. Building public awareness of the health impacts associated with housing affordability may be a key prerequisite for policy change. Whereas some studies have examined public opinion regarding the importance of housing quality on health, to our knowledge, no prior studies have explicitly tested whether people believe that housing affordability is a driver of health. Using mixed methods, data from a 2015 national survey were used to assess public understandings about housing affordability as a key driver of health. Study Design: We apply a convergent parallel mixed-methods research design to gain a fundamental understanding of current public beliefs regarding the relationship between housing affordability and health. Regression analysis was used to test whether Americans agreed that housing affordability is a fundamental driver of health. Qualitative data from responses to an open-ended item were examined to identify the ways Americans believe housing affordability matters. Finally, quantitative and qualitative findings were integrated to test whether the discourse used to discuss affordable housing induced consensus about the relationship between housing affordability and health, and, if so, whether significant differences existed within sub-group populations. Population Studied: The study's sample includes 400 adults, age 18 and older who participated in an online cross-sectional national survey administered by the FrameWorks Institute in November 2015. Principal Findings: These data support three key findings. First, understandings of the affordable housing-health relationship is politically and income-based driven, with conservative and high-income respondents less likely to acknowledge the effects of housing affordability on health ($p < .001$). Second, the values of opportunity ($p < .01$) and personal responsibility (61%), only a small percentage of respondents (<15%) identified connections between affordable housing and health in open responses. Conclusions: Contextualizing the issue of housing affordability as a key social determinant of health within various domain specific areas (e.g. health and fundamental need), in ways that connect with and mobilize the American public and policymakers (e.g. the use of value-based messaging), is both timely and highly imperative. Implications for Policy or Practice: Despite growing belief that governmental provision of affordable housing for low-income communities is "absolutely essential" and that health is impacted by social and economic factors, these findings provide some insight into the challenges policymakers and advocates may face in maximizing public support for government intervention. We recommend future investigations examining how opportunity and personal responsibility can be intertwined and diffused throughout policy discourse and messaging strategies, as well as in the development of policy language itself to widen public support, particularly among conservatives and high-income earners.

Presenting Author: Selena E. Ortiz

ST. LOUIS CHILDREN'S HOSPITAL EXTENDS ITS REACH INTO THE COMMUNITY TO PREVENT INFANT MORTALITY – RAISING ST. LOUIS Nila Garba, (St. Louis Children's Hospital), Meloday Schaeffer, Sarah Reinhold

Background Preterm birth and low birth weight are major causes of mortality in newborn infants. Disparities exist among African Americans, low socioeconomic status and drug-users who are more likely to have poor birth outcomes. Referrals to home visitation programs can help address disparities by providing services to populations in need. St. Louis Children's Hospital provides Raising St. Louis (RSTL), a free home visitation intervention beginning in pregnancy and continues until the child reaches age 5. RSTL is a partnership between Nurses for Newborns and Parents as Teachers to bring services to families in a coordinated and systematic way. The program is designed to improve birth outcomes, including birth weight and gestational age, ensure children are developing on track, teach effective parenting techniques, and provide wraparound resources and social services. Participants must live in one of the 22 STL zip codes designated with high infant mortality rates. Methods RSTL is evaluated through a comprehensive mixed-methods approach by tracking the number of participants, birth outcomes, developmental milestones and referrals to resources and social services, including schools, the Perinatal Behavioral Health Service (PBHS), Federally Qualified Health Centers (FQHC), medical homes, OB/GYN clinics and referrals from program participants. Basic demographic and behavioral information, including age, race, smoking and drug use were also collected. Results Since inception in 2014, 367 babies were born into the program; 89.4% babies are black. Preterm birth and LBW had a statistically significant relationship. 15.5% were born with a LBW (<5 lbs 0 oz) and 25.6% were born preterm (<37 weeks of gestation). Additionally, race had statistically significant relationships with LBW and preterm births. A sample of 63 births in 2017 were analyzed. Risk factors with statistical significance related to preterm births include reported drug use during pregnancy (55.6% born premature), reported smoking during pregnancy (75.0% born premature), and age of mother (57.1% born premature). Risk factors with statistical significance related to LBW include reported drug use during pregnancy (55.6% with LBW), and reported smoking during pregnancy (75.0% with LBW). Since 2014, 396 participants received services from RSTL; 146 have been discharged. Average number of days in the program is 317. The majority of participants were discharged (44%) within the first year, specifically between 3 and 9 months. Only 3% of all discharged participants were into their second year. A protocol was created to track the number of days since a participant's last appointment to decrease discharges. There is a statistically significant reduction in the discharge rate of participants that were referred through one of the FQHCs (41% to 37%). Conclusion Raising St. Louis focuses on improving the well-being of mothers, infant and children by tracking and improving birth outcomes for vulnerable populations in the St. Louis area. In addition, referrals help reach high risk mothers by recruiting and maintaining participants and decreasing discharges from the program.

Presenting Author: ShaNeco Fennoy

EXAMINING THE ROLE OF RACE-ETHNICITY IN U.S. INFECUNDITY Andrea N. Goodwin, (University of North Carolina - Chapel Hill Sociology/Carolina Population Center), Danielle Gartner, Robert A. Hummer, Whitney Robinson

Fundamental cause theory stipulates that higher educational attainment is generally associated with positive effects on individual-level health. The proposed study will assess whether highly educated women in different racial and ethnic groups experience similar reproductive health outcomes in the United States. In particular, this study will address whether highly educated African American and Hispanic women exhibit lower fecundity than their White peers, in association with disproportionately experiencing social and biological factors that decrease fecundity, or the ability to have children. This question is particularly important in the contemporary U.S. for several reasons. First, there is a clear trend of highly educated women postponing fertility, the rate at which women actually have children, and African American and Hispanic women are no exception to this trend. Second, there is recent evidence that higher educational attainment is actually associated with deleterious effects on young adult African American and Hispanic women's physical health compared to their less-educated counterparts. Third, relative to White women, African American and Hispanic women face more barriers to assisted reproductive technologies (ART) beyond the anticipated economic constraints, despite having higher rates of infertility. Arline Geronimus's theoretical perspective of weathering will guide this study. Based on Geronimus's work, I offer the hypothesis that African American and Hispanic women will have less favorable reproductive health compared with non-Hispanic White women. Geronimus's "weathering hypothesis," first introduced 25 years ago with regard to neonatal mortality, posits that African American and Hispanic women's health declines more quickly than White women in early adulthood as a physical consequence of cumulative racial inequality. This may result in African American and Hispanic women experiencing a higher level of impaired fecundity in their 30s and 40s relative to White women. To test this hypothesis, I will use data from the National Survey of Family Growth (NSFG). The NSFG gathers information on family life, pregnancy, infertility, use of contraception, and general reproductive health. First conducted in 1973, and expanding over time, the NSFG is a nationally representative sample of individuals 15-49 years of age. The sample for this proposed study will include data from the 2011-2013 NSFG and 2013-2015 NSFG, including 11,300 interviews with women, in an effort to ensure sufficient sample size for the populations of highly educated African American, Hispanic, and White women. In order to focus on highly educated women, I will limit the age range under consideration to 25-49. I will measure the fecundity status of highly educated women, trying to conceive or not actively preventing pregnancy, by using time-to-pregnancy (TTP), a commonly used measure to gauge the impact of social and environmental factors on conception. The key independent variable will be race/ethnicity. Variables frequently controlled for in fecundity studies will also be incorporated, including age, previous contraceptive usage, various substance use, and menstrual and reproductive history factors. To test the weathering hypothesis, I will assess whether racial/ethnic disparities in fecundity among highly educated women are apparent as early as ages 25-29, in addition to more advanced ages, while controlling for key covariates.

Presenting Author: Andrea N. Goodwin

USE OF ELECTRONIC HEALTH RECORDS (EHR) DATA AS A CATALYST FOR HEALTH EQUITY RESEARCH IN WOMEN'S HEALTH

Whitney R Robinson, (Department of Epidemiology, UNC Gillings School of Global Public Health), Sarah R Hoffman, Erin T Carey, Wanda K Nicholson, Til Stürmer, Timothy S Carey, Evan R Myers, Kemi M Doll

BACKGROUND: Each year, more than 18 million premenopausal women suffer from non-cancerous (“benign”) gynecologic conditions that can be treated with hysterectomy. The decision to undergo hysterectomy represents a complex trade-off between, on the one hand, permanent relief from symptoms and, on the other hand, cessation of fertility, risks from surgery, and, in some cases, early menopause and its long-term side effects. Historically, hysterectomy decision-making was influenced by factors outside of clinical need, such as a woman’s race, wealth, and intellectual status. Currently, marked differences in hysterectomy remain, with Black women, lower-SES women, and women in the South more likely to be treated with hysterectomy compared to their counterparts. However, the extent to which these differences reflect variations in clinical need, provider bias, or health care system inequities remains unclear. Most gynecologic research relies on administrative or claims data that fails to capture symptom severity or community-level or health system factors. Further, studies of electronic health records (EHRs) from single hospitals or small health systems fail to capture the diversity of women affected by gynecologic conditions. **OBJECTIVE:** To demonstrate the feasibility of using an EHR-based database from a large health care system to examine multilevel determinants of hysterectomy among a diverse population of reproductive-aged women. **METHODS:** Querying data from a healthcare system comprised of 10 hospital systems and treating >1 million female patients per year, we identified patients aged 18-44 years who underwent hysterectomy for a benign gynecologic condition from 04/04/2014 through 10/15/2017 in one state in the U.S. South. Patient-level demographic and clinical data are provided through a “data warehouse” that aggregates EHR-derived data for research purposes, capitalizing on the uniform EHR software used across this healthcare system. Moreover, data warehouse staff have linked each medical record to a census tract based on patient’s most recent home address (>90% match rate). Provider characteristics from a professional database will also be linked to each record. **RESULTS:** Of the 2,299 women identified, median age was 39 years. Most were non-Hispanic White (53%), non-Hispanic Black (30%), or Hispanic or Latino (8%). Most patients were insured by private insurance (n=1375; 60%), Medicaid (n=324; 14%) or a state-run plan for state employees (n=254; 11%). A sizable proportion of treated women were uninsured (n=189; 8%). An academic medical center performed the majority of surgeries (n=912; 40%), followed by a large, urban, not-for-profit hospital (n=789; 34%). Hospitals were in counties that varied considerably in demographics. For instance, percent of county residents living below the poverty line ranged from 7.8% to 20.5%. Racial/ethnic composition varied as well: 3.4%-13.0% Hispanic/Latino, 3.3%-33.9% non-Hispanic Black, 0.3%-4.1% Asian background. Future research will leverage patient census tract and provider data to examine contributions of residential contexts and provider influence. **DISCUSSION:** This one-state integrated health care delivery system includes a reproductive-aged patient population that is diverse with respect to race/ethnicity, insurance status, and residential environments. Data linkages present opportunities to examine determinants of treatment at the demographic, community, and provider levels, in addition to examining the rich clinical data available in the EHR.

Presenting Author: Whitney R Robinson

CONTENT ANALYSIS OF INTERVENTIONS USED BY NONPROFIT COMMUNITY HOSPITALS IN TEXAS BASED ON THE SOCIAL ECOLOGICAL MODEL

Jaspreet Sodhi, (University of Texas Medical Branch), John D. Prochaska, Jacques Baillargeon, Cara Pannel

Background: Community health assessment is a significant component of the public health assessment function and is important in the development, implementation, and evaluation of effective health improvement programs and policies conducted by nonprofit hospitals. However, the previous literature shows that nonprofit hospitals primarily focus their interventions at the intrapersonal level of the social ecological model and very few are targeted toward the actual improvement of community health. Overall, there is lack of information about the levels of intervention implemented by nonprofit hospitals based on the social ecological model, which our study will examine. **Objectives:** 1) Characterize and compare the differences in the levels of interventions, using the Social Ecological Model, identified and implemented by nonprofit community hospitals in the southeast region of Texas and 2) Examine the most common conditions by intervention level identified and implemented by nonprofit community hospitals using the social-ecological model approach. **Methods:** We will conduct a content analysis of publicly available community health needs assessment and implementation strategy reports for 35 nonprofit community hospitals in the southeast region of Texas. In particular, we will review CHNAs and implementation strategies reports for health priorities identified and level of intervention based on the SEM. Using four conditional categories, health priorities and intervention strategies will be identified as a health condition, behavioral condition, health system condition, and/or community condition. Next, within each conditional category, interventions will be classified as intrapersonal, interpersonal, organizational, community, or policy based on the social-ecological model. We will generate and report descriptive statistics for health conditional category and level of intervention, both independently and stratified. **Expected Results:** We anticipate that most of the interventions implemented by the nonprofit hospitals will be focused at the intrapersonal level, as opposed to higher-level interventions, and patient care services, as opposed to population health improvements. **Public Health Implications:** Analyzing the community health needs assessment and implementation strategies and the levels of the target by the nonprofit hospitals, will help in identifying community health issues and interventions for population health improvement.

Presenting Author: Jaspreet Sodhi

THERE GOES THE NEIGHBORHOOD: NEIGHBORHOOD COHESION AND MENTAL HEALTH AMONG LESBIAN, GAY AND BISEXUAL AMERICANS Guadalupe Marquez-Velarde, (Utah State University), Gabe H. Miller, Verna M. Keith

Public acceptance towards lesbian, gay, and bisexual (hereafter LGB) Americans has changed drastically in the last few decades. Despite an overall decrease in the stigma towards this population, the mental health outcomes of LGB individuals continues to show worrisome trends. LGB individuals are at higher risk of stress-related psychiatric disorders such as depression, anxiety and overall feelings of distress, have elevated prevalence of psychiatric morbidity, and are at greater risk for suicide attempts than their heterosexual counterparts (Cochran and Mays 2000a; Cochran and Mays 2000b; Cochran, Sullivan, and Mays 2002; Gilman et al. 2001; Mays and Cochran 2001; Remafedi et al. 1998; Sandfort et al. 2001). Neighborhood context plays an important role in mental health outcomes through providing a source of emotional support via social networks as well as resources and information that facilitate optimal health (Diez Roux 2001; Echeverria et al. 2008; Elliot et al. 2014; Hong, Zhang, and Walton 2014; Kawachi and Berkman 2014; Kim et al. 2013; Steptoe and Feldman 2001). LGB individuals are less likely to rate their neighborhood as highly cohesive when compared to their heterosexual counterparts (Henning-Smith and Gonzales 2017). However, the relationship between neighborhood cohesion and mental health outcomes among LGB individuals is understudied. This paper addresses this gap by examining the connection between poor mental health outcomes and lower perceptions of neighborhood cohesion among LGB individuals. Using 2013-2016 data from the Integrated Health Interview Survey (Blewett et al. 2016), we explore the relationship between sexual orientation, neighborhood cohesion, and mental health. Mental health is measured through three distinct outcome variables: level and frequency of depression, level and frequency of anxiety, and symptoms of distress. Self-reported sexual orientation compares heterosexual respondents (N=129,534) to lesbian, gay, or bisexual respondents (N=3,359). Neighborhood cohesion uses four scaled items assessing the level respondents agree that 1) this is a close-knit neighborhood, 2) there are people I can count on in this neighborhood, 3) people in this neighborhood can be trusted, and 4) people in this neighborhood help each other out. We dichotomize these items and add them to create a neighborhood cohesion scale ranging from 0 (disagree with all the statements) to 4 (agree with all the statements). Other covariates include gender, marital status, race/ethnicity, nativity, education and region. Preliminary analysis suggests that although neighborhood cohesion does decrease the likelihood of poor mental health, it has a milder effect among LGB than among heterosexuals. This paper has larger population implications through examining the relationship neighborhood cohesion and mental health among marginalized populations. Our findings suggest that a more accepting and welcoming neighborhood can reduce mental health disparities among sexual minorities.

Presenting Author: Guadalupe Marquez-Velarde

SUMMER SCHOOL ATTENDANCE, SCHOOL DISENGAGEMENT, AND SUBSTANCE USE: RESULTS FROM A NATIONAL SURVEY OF 8TH GRADE STUDENTS Sarah A Stoddard, (University of Michigan Ann Arbor), Philip Veliz

Purpose: Dropping out of high school has a consistent, negative effect on the social, economic, and health conditions of both individuals and communities. School dropout is associated with substance abuse and its' negative consequences during adolescence and adulthood. The middle school years are a key period for school disengagement and the initiation of substance use. We examine the associations between summer school attendance, school disengagement, and recent substance use in a national sample of 8th grade students. Method: Secondary data analysis of data from the Monitoring the Future cross-sectional study of 8th grade students between 1997 and 2016 (n = 112,705). The association between summer school attendance (i.e., 'did you ever attend summer school to makeup for poor grades or to keep from being held back') and recent substance use (i.e., past two-week/30-day binge drinking, cigarette use, marijuana use, nonmedical prescription drug use [NMPD], and illicit drug use) was assessed using binary logistic regression. Both bivariate associations (odds ratios [OR]) and associations (adjusted odds ratios [AOR]) controlling for socio-demographics (e.g., sex, race, cohort year, parental education) and key school disengagement items (e.g., suspension, average grade, truancy, aspirations to finish high school) were assessed. Results: 17.2% of 8th graders indicated summer school attendance; with roughly one-third of Black and Hispanics indicating summer school attendance. The bivariate analysis assessing summer school attendance and recent substance use behavior found that 8th graders who attended summer school had higher odds of binge drinking (OR = 1.65, 95% CI = 1.54, 1.76), cigarette use (OR = 1.71, 95% CI = 1.61, 1.81), marijuana use (OR = 1.91, 95% CI = 1.79, 2.03), NMPD (OR = 1.40, 95% CI = 1.29, 1.52), and illicit drug (OR = 1.36, 95% CI = 1.25, 1.47) use when compared to 8th graders who have never attended summer school. Analytic models controlling for only socio-demographic characteristics found similar statistically significant associations between summer school attendance and substance use behaviors, while models controlling for key school disengagement items (e.g., suspension, truancy) mediated the associations between summer school attendance and substance use behaviors. Having skipped/cut a full day of school during the past four weeks and a history of suspension had the strongest association with substance use. Conclusion: Youth with a high propensity to use substances and who are at risk for high school dropout (based on school disengagement) attend summer school. Our results point to summer school as a key opportunity to provide substance use prevention and intervention programming to a population of high risk youth. In particular, substance use interventions should target students who have a history of skipping school and suspension, as these factors had the strongest associations with substance use.

Presenting Author: Sarah A Stoddard

MECHANISMS UNDERLYING RACIAL/ETHNIC INEQUALITIES IN HEALTH: STATUS ATTAINMENT AND STRESS PROCESSES Tyson H. Brown, (Duke University)

Dramatic racial/ethnic inequalities in health result in unnecessary suffering and premature mortality. In addition to the significant human toll stemming from excess morbidity and mortality, health disparities also have substantial economic costs. Projected U.S. population trends—e.g., population aging and growth in racial/ethnic diversity—suggest that the human suffering and economic toll of racial/ethnic inequalities in health among the elderly are likely to grow dramatically in the future. This underscores the importance of understanding and addressing barriers to achieving health equity. While there is no dearth of research on health disparities and their etiologies, our understanding of the roots of these inequalities has been hampered by several limitations, including: examination of a limited set of mediators (e.g., SES), lack of formal tests of mediation; over-reliance on community-based samples; relatively little attention to mechanism underlying health disparities among older adults. This study extends prior research by formally testing the extent to which racial/ethnic inequalities in status attainment and stress processes mediate group differences in health among a nationally-representative sample of black, Mexican American and white adults in late life. Specifically, this study uses data from the Health and Retirement Study (2010/2012 core dataset and supplemental modules on psychosocial factors and biomarkers) and structural equation models (SEM) to examine the extent to which socioeconomic resources, stressors, and allostatic load—individually and collectively—mediate racial/ethnic inequalities in self-rated health among older adults (N=10,109). In doing so, this study widens our view of the social determinants of health by improving our understanding of mechanisms underlying racial/ethnic inequalities in health. Results reveal that a majority of the effect of race on self-rated health is indirect through SES (education, income, wealth), exposure to stressors (discrimination, chronic stressors, financial strain, neighborhood disorder, traumas), and allostatic load. Collectively, indicators of achievement and stress processes explained approximately 85% of black-white and Mexican American-white inequalities in self-rated health. Findings of residual inequalities in health are consistent with growing evidence that aspects of discrimination that are often unmeasured (e.g., structural racism, and discrimination in the criminal justice system, and in housing, labor and credit markets) also contribute to racial/ethnic inequalities in health.

Presenting Author: Tyson H. Brown

CITY-LEVEL MEASURES OF HEALTH, HEALTH DETERMINANTS AND EQUITY TO FOSTER POPULATION HEALTH IMPROVEMENT: THE CITY HEALTH DASHBOARD MARC N GOUREVITCH, (NYU School of Medicine, Department of Population Health), Marc N Gourevitch, Shoshanna E Levine, Jessica K Athens, Neil Kleiman, Lorna E Thorpe

Background: Most US cities lack actionable data, specific to their jurisdictions, on population health status, health determinants and health equity. While such data is often accessible at the county and state level, it is not readily available for many cities and urban neighborhoods, hindering local efforts to set health improvement priorities and to build cross-sector partnerships to foster healthier, more equitable communities. Intervention: To address the needs of city health planners and communities for data addressing health status, health determinants and equity at city and sub-city levels, we developed the City Health Dashboard, a web-based resource with 34 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. Created with input and feedback from four pilot cities—Waco, TX, Kansas City, KS, Flint, MI and Providence, RI—the Dashboard presents measures calculated to the city and, where possible, sub-city level, drawing on diverse data sources that include 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. When available, data is disaggregated by demographic characteristics. Initial findings: Early feedback from pilot cities included use cases suggesting the Dashboard's utility in bringing together local stakeholders to measure, understand, and take action to address pressing needs in their communities. For example, community health workers in Waco, Texas, used Dashboard data to pinpoint leading health and social service needs in their individual catchment areas to target programming and services to the residents they are working with. Use by the Healthy Communities Office in Providence, Rhode Island, focused attention on identifying barriers and opportunities for increased walking and biking to improve street safety and physical activity among residents in specific neighborhoods. Plan for scaling impact: To enhance the Dashboard's reach and impact, it is being scaled to all 500 US cities of population \geq 70,000, for release in May 2018. The expanded site will include new metrics and data visualizations, as well as resources of evidence-based policies and programs that can be implemented in response to newly identified population health improvement priorities (these features will be highlighted in our presentation). User-engaged design drew upon input from a City Advisory Committee of local stakeholders from 15 cities across the country chosen for their diversity in geography, size and governance structure. Committee members represent their city's health departments, local executive leadership, fire departments, community development organizations, and other local stakeholders, ensuring a wide range of perspectives in building this tool for population health improvement. Conclusion: As the City Health Dashboard expands to cities across the country, it promises to augment local surveillance efforts and support urban population health improvement at a national scale.

Presenting Author: Marc N Gourevitch

ENVIRONMENTAL JUSTICE IN THE CONTEXT OF OIL AND GAS DEVELOPMENT IN COLORADO: PATTERNS AND DRIVERS Katherine L Dickinson, (Colorado School of Public Health), John L. Adgate, Adrienne Kroepsch, Peter Maniloff, Lisa McKenzie

Oil and gas (O&G) development affects multiple social determinants of health in host communities. Potential negative effects include exposure to air, water, and noise and light pollution, as well as lower probability/higher consequence events such as the Firestone explosion in Colorado in 2017. At the same time, host communities may benefit from job opportunities and economic growth. We posit that environmental justice in this context, defined as the distribution of O&G risks and benefits across different groups, is a result of decisions by multiple actors over time. These include: - Individuals' housing location choices, which are made in part based on perceived risks and benefits of O&G development, and are constrained by available information and financial resources. - Communities' collective action to influence O&G siting decisions (e.g., through neighborhood meetings or commenting in regulatory venues); participation in and effectiveness of collective action depends on individual and community characteristics, including race and class. - Oil and gas developers' decisions about where and how to develop, which are driven by economic and regulatory factors. - Housing developers' decisions about the types and quantity of homes to build in proximity to O&G activities, taking into account economic, regulatory, and land and mineral ownership parameters. - Policymaker and regulator decisions that set the rules of the game and how these are enforced in different areas. Our poster synthesizes results from multiple ongoing projects in Colorado. Our team of environmental health and social scientists is tackling these questions using interdisciplinary research methods and data sources. An analysis of spatial data on housing and O&G well locations has shown that patterns of exposure to O&G-related health hazards vary across basins. Areas with ongoing O&G development dating back to the mid-1900s had higher proportions of low value homes in close proximity to wells, while average home values near wells were higher in areas with less historic development. Quantitative household surveys in five counties reveal that homeowners have limited knowledge about their homes' proximity to O&G wells, and most did not receive any information about local O&G development when they bought their homes. People living closer to wells also tend to have lower O&G-related risk perceptions. Qualitative analyses documented a case where community opposition led developers to move their well from a site near a more affluent charter school to one near a public school in a lower income, Hispanic neighborhood. Integrating these approaches, we outline a mixed-methods research framework. We will analyze large secondary datasets (US Census, real estate transactions, O&G well permits and development activities, new housing permits) to estimate spatially and temporally explicit models of individual, O&G developer, and housing developer location choices. These large-N analyses will be coupled with quantitative household surveys and qualitative interviews with community members, O&G developers, home builders, and regulators to more fully understand the processes underlying environmental justice outcomes. Building on existing partnerships, research will be conducted in collaboration with policy makers and O&G host communities to inform efforts to increase equity in O&G risks and benefits.

Presenting Author: Katherine L Dickinson

USING ACADEMIC DATA TO IDENTIFY ADOLESCENTS WITH BEHAVIORAL HEALTH NEEDS Eryn Piper Block, MPP, (Department of Health Policy and Management, Fielding School of Public Health at UCLA), Sheryl Kataoka, MD, MS, Rebecca Dudovitz, MD, MS

Background: Low-income minority children often face multiple barriers to accessing healthcare and so may not present to the health system until their burden of disease is high. Identifying youth early in the course of illness through schools can prevent emotional and behavioral health problems through coordinated care. Academic achievement is a powerful determinant of child and adolescent health disparities. Multiple measures of declining academic performance and school engagement, including grades, attendance, test scores, and disciplinary infractions are associated with substance use, depression, and post-traumatic stress disorder. We hypothesize that poor school performance may be a valuable early indicator of children in need of behavioral health services. Methods: To improve equity in under-resourced Los Angeles communities, this study is conducted in partnership with community leaders in the Los Angeles Unified School District (LAUSD) to create a pragmatic surveillance tool to identify students in need of mental health care. First, we analyze data from Waves I, II, and III of the National Longitudinal Study of Adolescent to Adult Health (Add Health) to develop a risk-indicator tool using demographic and academic data from students' high school transcripts to predict self-reported substance use, depression, and PTSD during adolescents. Models will be built using forward selection, based on incremental increase in area under the ROC curve (AUC). We will then test the sensitivity, specificity, and predictive value of this tool to identify each behavioral health outcome using survey, health record, and academic data from students served by the LAUSD. Results: The Add Health sample includes 6798 adolescents with both academic and health outcome data available. Demographics of this sample are nationally representative. LAUSD datasets include clinical depression screening results from 260 adolescents visiting school-based primary care clinics from 2013-2016; self-reported PTSD symptoms (PC-PTSD scale) from 1944 LAUSD students who participated in a school-based resilience classroom curriculum in 2015-2016; and self-reported substance use from 240 LAUSD high school students surveyed in 2017 as part of an evaluation of AVID, a college preparatory program offered to low-income minority students who are unlikely to attend college without additional support. All three LAUSD datasets reflect the demographic characteristics of the district in which 74% of the students are Latino, 8.4% are African American, and 76% qualify for free- or reduced-price meals. Risk-indicator models and performance metrics will be available at the time of presentation. Conclusions: Using academic data to anticipate and deliver behavioral health services where they are most needed can shift the health system towards prevention and address the underlying drivers of school misbehavior early. This study suggests that passively collected, near universal academic data might serve as a critical population health management tool.

Presenting Author: Eryn Piper Block, MPP

EXPLORING REGIONAL CLASSIFICATIONS FOR PREDICTING HEALTH BEHAVIORS BY SEX ACROSS UNITED STATES Julia Kay Wolf, (West Virginia University), Jeralynn Cossman, Douglas Myers

Research has found sex-specific disparities in obesity, physical activity, and smoking rates across areas of the United States. However, these areas are typically operationalized as the census regions or divisions which were defined without considering sociological theories of health. Underlying reasons for areal variations remain unclear. We test the empirical predictive capability of more theoretically informed regional classifications of the US on these health behaviors and outcome by sex. The classifications include the US Census Bureau's administrative divisions and regions, Joel Garreau's (1981) economic "Nine Nations of North America," and Colin Woodard's (2011) eleven cultural "American Nations." Sex-specific county-level obesity, physical activity, and smoking data are from the Institute for Health Metrics and Evaluation's Global Health Data Exchange. They were used to explore how well these regional definitions explain sex-specific differences in prevalence of obesity and sufficient levels of physical activity for 2001, 2009, and 2011 as well as the prevalence of males and females who currently smoke daily for 1996-2012. Preliminary findings show that Woodard's cultural regions predicted obesity prevalence for females better than the US Census Bureau's divisions and Garreau's regions. Each classification scheme was relatively similar in its capability to predict physical activity prevalence; however, each was able to predict better for females than for males. We have not yet run preliminary analyses with smoking prevalence. These findings provide support for using a cultural theoretical framework to analyze disparities in obesity by sex across the US and for examining the effect of place on female physical activity levels.

Presenting Author: Julia Kay Wolf

STUDYING EQUITY-ORIENTED IMPLEMENTATION IN A STATEWIDE SYSTEM OF LOCAL PUBLIC HEALTH DEPARTMENTS: AT THE BOUNDARY OF PRACTICE-BASED RESEARCH AND IMPLEMENTATION SCIENCE Katherine Stamatakis, (Saint Louis University College for Public Health and Social Justice), Elizabeth Baker, Hannah Keedy, Allese McVay

Background: Population health approaches run the risk of ignoring or exacerbating disparities if they do not contextualize programs, policies and systems changes to address the needs of vulnerable populations (VP). The study objective was to examine the capacity of local public health organizations to implement structural approaches to reducing inequities that address the heterogeneity of VP within their communities. Data and Methods: Primary data were collected via an online survey of 92 Missouri local health department directors (LHD, 80% response), with a follow-up survey sent two weeks later in order to conduct a test-retest reliability sub-study. Drawing upon practitioner expertise, frameworks from implementation science, public health essential services and practice recommendations for health equity, a questionnaire was developed. Measures described heterogeneity of VP served; implementation climate toward addressing the needs of VP, processes and practices for addressing inequities in general and specifically in relation to obesity prevention, and training needs. The resulting data were examined with descriptive statistics (frequency distributions for individual items and univariate statistics for summary scales). Test-retest reliability was assessed using weighted kappa for variables with Likert response categories (e.g., implementation climate items); kappa (for binary response) or ICC (for continuous summary indices). Linear regression models were conducted to test hypotheses of whether a higher implementation climate score was related to a higher score in indicators of LHD equity-related action. All analyses were conducted using SAS version 9.4. Principal findings: There was variation in identification of specific VPs across jurisdictions, though all respondents identified low income groups. Promoting the health of VP was overwhelmingly deemed important, though there was frequent concern over conflicting priorities. Likewise, a strong internal push to promote the health of VP was often accompanied by limited external political and community support. A higher implementation climate score was associated with LHD involvement in more equity-related action in four areas: assessment and planning ($\beta=0.63$, $p<.001$), monitoring and analysis ($\beta=0.28$, $p=.001$), leadership support ($\beta=0.53$, $p<.001$), and obesity prevention ($\beta=1.60$, $p<.001$). The associations were little altered by adjustment for service population size and heterogeneity of VPs served in the jurisdiction. Conclusion: These data provide insights into organizational gaps and training needs that may guide policies and strategies to accelerate and develop sustainable infrastructures for implementation of health equity interventions that more effectively address the heterogeneity of vulnerable populations in communities served.

Presenting Author: Katherine Stamatakis

IMPACTS OF THE OPERATION PEACEMAKER FELLOWSHIP IN RICHMOND, CALIFORNIA ON FIREARM DEATHS AND INJURIES: A QUASI-EXPERIMENTAL STUDY Ellicott Matthay, (Evidence for Action, Robert Wood Johnson Foundation, University of California - San Francisco), Kara Rudolph, Scott Zimmerman, Dana Goin, Kriszta Farkas, Jennifer Ahern

Firearm violence is a major driver of population health and health disparities in the United States (US). Identifying effective, creative, and multifaceted interventions to address firearm violence is a top priority for public health and public policy researchers and practitioners. We evaluate the impacts of the Operation Peacemaker Fellowship, a novel program launched by the Office of Neighborhood Safety in the City of Richmond, California in 2010 to combat its high and rising rates of firearm violence. Operation Peacemaker identifies the small subset of individuals at highest risk for shooting someone else or being shot and engages them in a comprehensive program that combines goal setting, life experiences, stipends, job training, social and health services, and 24-hour intensive case management. Notably, the program seeks to reduce gun violence without further changing firearm policies or restricting access to firearms. A previous process evaluation of Operation Peacemaker conducted by the National Council on Crime and Delinquency documented declines in homicide and firearm assault in Richmond following the implementation of the program, as well as improvements in quality of life for participants. However, to date, no studies have used a more rigorous quasi-experimental approach. We used comprehensive data on all hospital visits and deaths in California from 2005 to 2013 and a modified synthetic control approach to assess the relationship between Operation Peacemaker and firearm and non-firearm homicide and assault injuries. The approach used a weighted average of comparison cities and accounted for other potential causes of changes in violence. Preliminary findings suggest that the Fellowship was associated with an average 32% reduction in firearm-related deaths and hospital visits and an average 19% increase in non-firearm homicides and assault-related hospital visits. These results were unlikely to be explained by chance alone. Future planned analyses will assess impacts on firearm and non-firearm homicide and aggravated assault as measured in FBI Uniform Crime Reports. Operation Peacemaker may have reduced firearm violence in Richmond, but a co-occurring increase in non-firearm violence raises the possibility of substitution. Further research should examine the possibility of substitution and the dynamics that might underlie such a phenomenon. In addition, replication programs currently being conducted in other US cities provide opportunities to assess effects of Operation Peacemaker in other settings.

Presenting Author: Ellicott Matthay

UNDERSTANDING THE ROLES OF EXPLICIT AND IMPLICIT BIAS AMONG HEALTH CARE PROVIDERS: A LITERATURE REVIEW Marie Plaisime, (Howard University), Marie-Claude Jippuep-Akhtar

Objective: Evidence suggests that the relationship between health disparities experienced by Black men in cardiovascular care must be further explored. Researchers have explored policy implications and the patient-provider relationship; however, few have been able to address the role of institutional racism within the clinical-decision making process. This review seeks to (a) compare the role of and the extent to which current literature examines bias and institutional racism in the health care system, (b) the methodological use of implicit and explicit bias in clinical settings, and (c) the distinct roles of care providers (medical physicians, medical students, nurse practitioners, nurses) and their impact on patient outcomes. **Background:** Using Camara Jones' framework, institutional racism refers to the systematic and differential access to goods and services. Black men are less likely to receive invasive cardiac procedures in comparison to Whites, even when presenting identical signs and symptoms. The role of provider bias in the clinical decision-making process has been extensively studied and suggested as a possible contributor to this phenomenon. Despite the breadth and depth of available research, there remains a gap in understanding the providers' perspective in understating how race and racism play a role in the clinical setting. **Methods:** A literature review was conducted using the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) recommendations using ProQuest, PubMed, PsycINFO, and SCOPUS. Articles were considered eligible if they were published between January 1998 and February 2018 and focused on health providers (medical physicians, medical students, nurse practitioners, nurses). Key search terms included institutional racism, healthcare provider, clinical-decision process, healthcare, bias, stereotype, discrimination, and healthcare disparities. Using Nvivo, a qualitative data analysis application, we organized and managed the articles for review and inclusion. Articles were excluded if they solely examined explicit racial attitudes, subjects were not health providers, not in English, and not conducted in the United States. **Results:** Twenty-eight articles were examined to explore institutional racism in clinical settings, the methodical use of implicit and explicit bias in clinical settings, and the distinct roles of clinical providers. While many studies have focused on the role of implicit bias, fewer studies have explored the role of explicit bias. This may be due to (a) research time constraints, (b) feasibility, (c) availability of resources, and (d) ethical concerns. Furthermore, literature has only examined this phenomenon in relatively small groups. While they provide valuable information, most of the articles examined had limitations related to sample size and methodology. **Conclusion:** Future studies should examine the role of institutional racism and explicit bias in larger datasets as it would provide more reliable samples for analysis.

Presenting Author: Marie Plaisime

MIGRATING TOWARD RISK: AN ANALYSIS OF GENDER AND HIV PREVALENCE IN ZIMBABWE Hannah Randolph, (American University Department of Economics), Catherine Hensly

East and southern Africa continue to demonstrate some of the highest rates of HIV in the world. Numerous macroeconomic models have revealed the adverse impacts of the virus on economic development in the region while highlighting the need for more micro-level analyses to understand the underlying channels in which the virus interacts (e.g. Dixon et al 2002). Although migration itself is not thought to contribute to HIV vulnerability, migrants demonstrate significantly higher odds of HIV infection compared to non-migrants in sub-Saharan Africa (Magadi 2013). Meanwhile, gender discrepancies are left unexplained by any biological or physiological differences. Young women ages 15-24 are especially vulnerable, accounting for approximately a quarter of all new infections in 2016 despite only representing only a tenth of the population. Relatively few studies rigorously consider the effects of either of these factors on HIV status, let alone the interaction of the two. The exception is Camlin et al 2010, which documents differing patterns of HIV status for male and female migrants in KwaZulu-Natal, South Africa. This paper tests whether similar results can be found in a different cultural context, and therefore whether such results might be generalizable to a larger region. Zimbabwe's male-dominated gender relations have proliferated in spite of policies aimed at gender parity; that, combined with a major economic crisis culminating in total abandonment of its currency in 2009, lends itself to a more unique analysis that incorporates migration. This project explores how HIV/AIDS affects and is affected by migration, with an emphasis on the observed difference in vulnerability between genders using data from the Zimbabwe Demographic and Health Survey (DHS) and AIDS Indicator Survey (AIS). The data include extensive socio-demographic and migratory information, such as duration of current residency and previous province of residence, as well as information regarding HIV-related attitudes, perceptions, and behaviors. Furthermore, responses are matched to HIV status determined by independent blood testing conducted at the time of the survey. The analysis proceeds as follows. Bivariate examination first reveals trends between characteristics of men and women by migratory and HIV status. Multilevel logistic regression models are used to explore the extent of the effects of migration on HIV status while controlling for other socio-demographic characteristics. By fitting different models for men and women in Zimbabwe, the analysis explores the interplay of migration and HIV vulnerability through a gender lens previously unexplored in the literature. Finally, the paper explores policy prescriptions implied by the results, including an interpretation of which groups are most vulnerable to HIV and potential channels of HIV prevention. Camlin, C. S., Hosegood, V., Newell, M.-L., McGrath, N., Barnighausen, T., & Snow, R. C. (2010). Gender, Migration and HIV in Rural KwaZulu-Natal, South Africa. *PLOS ONE*, 5(7), e11539. Dixon, S., McDonald, S., & Roberts, J. (2002). The impact of HIV and AIDS on Africa's economic development. *BMJ : British Medical Journal*, 324(7331), 232–234.

Presenting Author: Catherine Hensly and Hannah Randolph

RACIAL/ETHNIC DISPARITIES IN PHYSICAL WORKING CONDITIONS AND DISCRIMINATION EXPERIENCES AMONG A NATIONAL SAMPLE OF U.S. WORKERS Rada Dagher, (National Institutes of Health)

Background: There is a scarcity of research that documents racial/ethnic disparities in the occupational health of U.S. workers; however, the scant existing research suggests occupational segregation, where African Americans and Hispanics are the least likely to be in managerial, professional and related jobs and most likely to be in service jobs and in production, transportation and material moving jobs. One's occupation structures their differential access to resources and protective factors, exposure to risks, and life chances including health. This paper examines the racial/ethnic differences in the quality of physical working conditions and perceptions of employment discrimination among U.S. workers. Methods: This study utilizes data from the 2015 American Working Conditions Survey (AWCS), a new nationally representative survey of U.S. workers, ages 18-71. The AWCS was closely harmonized with the 2015 European Working Conditions Survey, which was fielded in 35 European countries. The analytical sample includes 2,033 survey participants who were "currently" working. Results: The mean age was 47.9 years (SD = 12.2), 58.7% were married/partnered, 49.9% had a college degree, and 9.8% rated their general health as fair/poor. The racial/ethnic composition of the sample was as follows: 65.1% White, 19.1% Hispanic, 10.2% Black, 3.25% Asian/Pacific Islander, 0.6% American Indian/Alaska Native, and 1.7% other race/ethnicity. In terms of discrimination experiences, chi-square analyses showed that Asians (14.5%), Blacks (13.4%), and Hispanics (7.5%) were significantly more likely than Whites (3.5%) to be treated less favorably at work based on race/ethnicity/color. Similarly, Asians (14.5%), Blacks (5.9%), and Hispanics (5.9%) were significantly more likely than Whites (2.6%) to be treated less favorably based on nationality. In terms of physical work exposures (half of the time or higher), Blacks and Hispanics, respectively, were more likely than Whites to be exposed to: vibrations from hand tools and machinery (16.1%, 11.7% vs. 7.9%), loud noise (23.2%, 18.8% vs. 11.8%), high temperatures (21.5%, 22.9% vs. 16.0%), low temperatures (25.8%, 19.6% vs. 13.1%), breathing of smoke/fumes/powder/dust (11.8%, 8.4% vs. 5.5%), handling chemical products (15.1%, 16.2% vs. 8.9%), breathing tobacco smoke (14.5%, 7.8% vs. 3.5%), and handling infectious materials (17.8%, 14.5% vs. 10.0%). Asians were more likely than Whites to be exposed to breathing of smoke/fumes/powder/dust (6.4% vs. 5.5%), and breathing tobacco smoke (4.8% vs. 3.5%). In terms of physical work demands (half of the time or higher), Blacks and Hispanics, respectively, were more likely than Whites to be in a job that involves: tiring or painful positions (30.0%, 32.7% vs. 22.1%), lifting/moving people (18.2%, 20.1% vs. 8.5%), carrying/moving heavy loads (30.5%, 33.8% vs. 17.4%), and repetitive hand/arm movements (71.1%, 72.8% vs. 56.8%). Asians were more likely than Whites to be in a job that involves lifting/moving people (11.1% vs. 8.5%). Finally, Blacks and Hispanics were more likely than Whites to rate their health as fair or poor (13.4%, 16.4% vs. 7.4%). Discussion: Results showed significant racial/ethnic differences in discrimination experiences and quality of physical working conditions. Next, decomposition analyses will be conducted to examine the contribution of physical working conditions and discrimination experiences to racial/ethnic disparities in workers' health.

Presenting Author: Rada Dagher

RACE/ETHNIC DISPARITIES IN EXPOSURE TO CHRONIC STRESSORS VARIES BY AGE AMONG OLDER ADULTS Lauren Brown, (USC Leonard Davis School of Gerontology), Uchechi Mitchell, Jennifer Ailshire

Chronic stress exposure is linked to worse mental and physical health and blacks tend to report more stress exposure than whites. The experience of chronic stressors may vary across the older adult life course, making it important to investigate age differences in the race disparity in chronic stress exposure among older adults. We examine age variation in race/ethnic differences in the number of reported chronic stressors in five key domains: health, financial, residential, employment, and relationship. Data come from 6,878 white, black, and Hispanic adults age 54+ from the psychosocial subsample of the 2006 Health and Retirement Study. Descriptive results show whites and Hispanics report a decline in exposure to financial, residential, employment, and relationship stress after age 70. Yet, blacks report an increase in residential stress and relatively smaller decline in financial, employment, and relationship stress after age 70. Reports of health related stress increases for all race/ethnic groups after age 70. Multivariate results show that blacks ($\beta=0.23$, $p<0.001$) and Hispanics ($\beta=0.13$, $p<0.01$) report more stressors than whites. But while fewer stressors are reported by adults 70+, compared to the young-old ($\beta=-0.18$, $p<0.001$), analysis of age interactions shows that blacks ages 70+ reported more stressors than their white counterparts ($\beta=0.14$, $p<0.05$). Importantly, total stress burden is similar among blacks and whites ages 54-69. Results were similar for after adjustment for sociodemographic characteristics. Hispanic-white differences were attenuated after adjusting for SES. Thus, race/ethnic disparities in stress may reflect differential experiences of age-related declines in chronic stress exposure.

Presenting Author: Lauren Brown

WEST PHILADELPHIA PROMISE NEIGHBORHOOD: MULTISECTORAL DATA INTEGRATION TO PROMOTE CHILD AND FAMILY WELL-BEING Felice Le-Scherban, (Drexel University), Irene Headen, Amy Carroll-Scott

Background: The West Philadelphia Promise Neighborhood (WPPN) is a 5-year, place-based project funded by the U.S. Department of Education to create a comprehensive cradle-to-career continuum of support for children who live or attend school in designated neighborhoods in West Philadelphia, as well as their families and communities. The WPPN footprint is an urban area of roughly two square miles comprised of historically vibrant, predominantly African American communities and adjacent to large educational and health institutions such as Drexel University, the University of Pennsylvania, and many large hospitals. Yet residents have largely not benefited from the economic growth of these "eds and meds," experiencing a dramatically higher poverty rate (48%), unemployment rate (15%), and lower median household income (\$19,236) relative to other neighborhoods in Philadelphia and the US. Drexel University serves as the WPPN lead agency, with partnership from the School District of Philadelphia, the City of Philadelphia, and over 100 other organizations and service providers. **Objective:** A key focus of WPPN, and of the overall Promise Neighborhoods program, is the creation of integrated, multisectoral data systems to support, inform, and evaluate the initiatives. The WPPN Data and Research Core, led by Drexel's Dornsife School of Public Health, is leading the creation of two connected systems to accomplish this goal. We will describe the process of the WPPN data systems development, the infrastructure of the systems, and challenges in their implementation. **Approach:** The first system is a comprehensive, secure integrated longitudinal data system that integrates child-, family-, school- and neighborhood-level information into a robust longitudinal data system. This will synthesize data from City, clinical, and School District systems, as well as annual school surveys and biennial population-based neighborhood surveys. Integrated data will be linked to a separate, real-time case management system to provide contextual information about each child through secure permissions for case management by service providers. At the same time, student program and service utilization and outcomes data from the case management system will input back into the integrated data system. This will allow WPPN to track children's progress over time in order to robustly evaluate WPPN initiatives and identify multilevel factors affecting child outcomes over time, as well as produce regular snapshots of progress on Promise Neighborhood-required indicators and other measures of population impacts. **Discussion:** Challenges in creating the WPPN data systems include both challenges shared across data integration efforts and challenges unique to the WPPN context. These include 1) aligning organizational priorities and goals for data integration, 2) logistics and technical capacity for data integration, 3) lengthy legal processes, 4) consent and privacy, 5) sustainability, and 6) developing participatory processes for data governance, requests, and use. Despite these challenges, WPPN presents an unprecedented opportunity to use data systems as a basis for multisectoral partnership to improve child and family well-being.

Presenting Author: Felice Le-Scherban

COMMUNITY ENGAGED RESEARCH ON COLLABORATION AROUND INFANTS AT RISK Lina Svedin, (University of Utah), Kristine Campbell, Tonya Myrup

This research is part of a larger effort to conduct community engaged research to improve health outcomes for children at risk who are 0-5 years old. The research team featured in this poster consists of a child abuse pediatrician, a public administration and public policy professor and the Deputy Director of Utah's Child Welfare agency. With training and funding support from the Robert Wood Johnson Foundation's Interdisciplinary Research Leaders program the team has been seeking positive action that can improve health outcomes for the kids in these abuse cases. Almost 1 in 20 children in America are referred to child welfare services for suspicions of maltreatment every year. Infants are at highest risk of dying from maltreatment. Frustrated by the experience of key agencies interacting with these kids continuing to work in silos in Utah this research team has been pursuing three complimentary studies of inter-professional collaboration around infants referred to child protective services. The first study is a nationwide regulation and policy study scoring states regulatory framework as being more or less supportive of collaboration between Child Protective Services and other professional groups. The regulation study has been followed up with interviews with child welfare administrators, child protective services supervisors and case workers as well as pediatricians working in the most and the least collaborative states. The interview portray how these regulations are interpreted and implemented at different levels of the child welfare system. The results of this study reveal important information on what facilitates and what hinders collaboration on the ground. Rather than referring to a strong regulatory framework, child welfare systems that experienced extensive and effective collaboration attribute their success to inter-personal relationships, multi-disciplinary reviews of cases and face-to-face interactions. In other words, factors other than regulation and policy. The primary obstacles to collaboration states include differential power dynamics in inter-professional interactions, high turn-over among protective services case workers, cultural differences in communication, and profession based differences in how risk assessment. Consequently, socio-cultural factors along with perception and power, not policy or law itself, undermine collaboration around infants at risk of abuse and neglect. The second is an implementation study of a collaborative policy in Utah. The team is interviewing CPS supervisors and case workers to see if the same barriers and facilitator of collaboration identified in study 1 are operating in the Utah context with this medical referent letter policy. The third study pilots a collaborative practice initiated by CPS case workers in a randomized controlled trial. The practice connect families in needs with a medical home and longer-term professional support. Parent-reported infant health reports and satisfaction with service are collected at service and six month after case closure. The team presents results from the first and third study. The also reflect on lessons learned about designing and conduct community engaged research, working across disciplines and communicating research to policy audiences.

Presenting Author: Lina Svedin

A PLACE BASED APPROACH TO EARLY CHILDHOOD WELLNESS IN CINCINNATI: COMMUNITIES ACTING FOR KIDS EMPOWERMENT (CAKE) Michael Topmiller, (American Academy of Family Physicians), Farrah Jaqueez

Background: When positive policy changes and promising development projects come to cities, inclusion in decision-making and dispersion of benefits do not reach all neighborhoods equally. In Cincinnati, neighborhoods that are not adjacent to the well-funded research universities and hospitals are often overlooked. After city residents passed a tax levy giving \$15 million annually toward universal preschool, agencies and policymakers began to organize to secure portions of the funding. Stakeholders in the two northern Cincinnati neighborhoods of Carthage and Roselawn formed Communities Acting for Kids Empowerment (CAKE), an eleven-member team including early childhood organizations, Latino-serving agencies, racially diverse churches, community organizers, and parents. Funded through Robert Wood Johnson Foundation's Interdisciplinary Research Leaders program, CAKE uses an intentionally designed process reflecting three mutually identified core values: shared decision-making, asset-based design, and real-world change. Its goals are to 1) create a network of engaged stakeholders ready for action, 2) develop a multi-level intervention with diverse community inputs, and 3) increase preschool awareness in Carthage and Roselawn. CAKE planned and carried out four community meetings (called Group Level Assessments, GLAs) with diverse community groups (a Black Baptist Church, a diverse Christian Church, a Hispanic Catholic Church, and early childhood care union members) to elicit feedback about community assets, challenges, and priorities related to early childhood well-being. The purpose of this poster is to demonstrate process of getting from community feedback to specific research questions. Research Question: How does a community-based research partnerships (CAKE) get from community input (from GLAs) to specific research aims? Significance: The primary contribution of this research is describing the process of developing a research project that truly reflects the interests of the community, which will lead to research outcomes that produce real-world change. Data/Methods: Research members of CAKE analyzed GLA data and created broad themes to present to rest of CAKE at monthly meeting. Community leaders in CAKE provided feedback, edited categories (removing some, adding others), and came together to create a final list of themes related to community assets and barriers at multiple levels. At the next monthly meeting, a "pass the buck" exercise was done to prioritize themes by level, and create a list of questions that would be used to develop more specific research aims and survey questions. Preliminary Results: A list of questions for multiple levels (community, household, individual) were developed that provided the basis for a more focused research project, while also providing survey questions for next stage of project (surveys with early childhood teachers and parents of young children). Limitations/Challenges: Developing a community-based research project is a slow process, as it takes time to build relationships, establish trust, and share decision-making. A major challenge was having too broad of initial focus (early childhood wellness).

Presenting Author: Michael Topmiller

I DON'T WANT IT BUT IT WOULD BE GOOD FOR THEM: ADDRESSING THE TENSION BETWEEN COMMUNITY GOOD AND PERSONAL INTEREST TOWARD LONG-ACTING INJECTABLE HIV THERAPY IN A MULTI-SITE STUDY Morgan M Philbin, (Columbia University Mailman School of Public Health, Department of Sociomedical Sciences), Elizabeth N Kinnard, Carrigan Parish, Oluwakemi Sosanya, Mardge Cohen, Elizabeth Golub, Adaora Adimora, Lakshmi Goparaju, Margaret Fischl, Lisa R. Metsch

Background: HIV medication is critical to support individual- and population-level health. However, current HIV medication for treatment and prevention exists almost exclusively in oral formulations that require daily adherence. Subsequently, long-acting injectable (LAI) antiretroviral therapy (ART) and pre-exposure prophylaxis (PrEP) are being developed to address this major barrier. However, little research has explored whether women living with or at risk for HIV would be interested in emerging injectable formulations. Methods: We conducted 45 in-depth interviews with HIV-positive (n=30) and HIV-negative (n=15) women at Women's Interagency HIV Study (WIHS) sites in New York, Chicago, and San Francisco. The majority were women of color (93%), unemployed (64%), and earned <\$12,000/year (71%); median age was 54. Interviews were recorded, transcribed, and analyzed using the constant comparative method. Results: Half of the HIV-negative women were familiar with PrEP and, once informed of its purpose, nearly all reported that PrEP would not be useful to them regardless of its formulation. When asked to choose between pills and monthly injectables, 11/15 women stated a preference for LAI PrEP. However, participants identified specific sub-populations for whom they thought PrEP would be most useful: 1) Youth, "People in their early 20s...they're kind of taking life for granted. They feel invincible"; 2) People with multiple sex partners "If they're going to be with somebody different than their partner, then they should take it—take two!"; 3) Women, "Women are often cautious because you never know...I think it'd be more women than men" And; 4) Homeless women, (specifically LAI): "We're living homeless and we don't know where our medication is every day...So in that kind of setting they would need to go into a doctor's office and get the injection." Among HIV-positive women, one-third preferred taking daily pills over monthly LAI ART, but still believed that LAI ART could benefit others, including those: 1) Struggling with adherence, "People who forget to take their meds. I think a person that misses many doses should have that needle"; 2) Whose pills remind them of HIV, "I think they would prefer once a month shot over the daily, because if the daily [pills] is bringing them down, that's no good"; 3) Who only take HIV medication, "If I was only on HIV meds I'd switch them out in a second. But since I'm already also taking psych meds..." and; 4) Incarcerated women, "because a lot of women do not share their status in jail because they don't want the people in jail to know." Conclusion: While many HIV-negative women felt that PrEP was not relevant for them regardless of its formulation, and a third of HIV-positive women would prefer to continue taking pills over LAI ART, both were able to identify several other sub-populations that may be more amenable to, and benefit from, LAI PrEP and ART. As these LAI formulations are developed, specific attention should be paid toward targeting women for whom they are most relevant. A user-centered and community-informed approach may improve perceived relevance and increase usage among target populations.

Presenting Author: Morgan M Philbin

THE STATE-LEVEL SEXUAL EDUCATION POLICY CLIMATE AND SEXUAL RISK BEHAVIORS AMONG A NATIONAL SAMPLE OF HIGH SCHOOL STUDENTS: FINDINGS FROM THE 2015 YOUTH RISK BEHAVIOR SURVEILLANCE SURVEY Morgan M. Philbin, (Columbia University Mailman School of Public Health), Elizabeth N. Kinnard, Nicole A. Smith, Daniel J. Feaster

Background: Research on sexual risk behaviors among high school students has focused primarily on individual-level factors, while the influence of state-level sexual education policies has received less attention. In addition, research commonly takes a 'one-policy one-outcome' approach (e.g., abstinence-only education on teen pregnancy), but the influence of the sexual education policy climate in the aggregate is less understood. We therefore examined the association between the state-level sexual education policy climate and sexual risk behaviors among a national sample of high school students. Methods: We identified state-level sexual education policies relevant to youths' sexual risk behaviors and coded them on a continuum from most inclusionary (low) to most exclusionary (high). We used exploratory factor analysis to develop a policy climate index, and confirmatory factor analysis (CFA) identified a clear factor containing five state-level sexual education policies: the promotion of heterosexual marriage, sex only within the context of marriage, the negative outcomes of teen sex, discrimination toward lesbian, gay, and bisexual (LGB) individuals/non-heterosexual sex, and the receipt of abstinence-only funding. CFA demonstrated excellent model fit with all factor loadings >0.75. We then created a sum score using these five policies. Multi-level modeling was used to examine the relationship between the state-level sexual education policy climate and three sexual health outcomes—ever had sex, number of lifetime sexual partners, and number of partners last three months; each model controlled for age, grade-level, gender, race, and sexual identity. We examined outcomes among youth in 26 states in the 2015 National-level Youth Risk Behavioral Surveillance Survey (YRBS), a population-based health survey of high school students. Results: A total of 15,624 youth participated in the 2015 National YRBS, 48.7% were female, 54.5% White, 13.6% Black, and 22.3% Hispanic; youth were evenly sampled across grades 9-12. In fully adjusted multi-level models, youth living in states with more exclusionary state-level sexual education policies (e.g., promoting the negative aspects of teen sex and homosexuality) were significantly more likely to have ever had sex compared to youth in states with more inclusionary policy climates (Coef. 0.34, 95% CI: 0.06, 0.62). Youth in states with more exclusionary sexual education policy climates also reported significantly more lifetime sexual partners (Coef. 0.03, 95% CI: 0.01, 0.05); youth in states with more exclusionary sexual education policy climates also reported more sexual partners in the last three months (Coef. 0.029, 95% CI: 0.01, 0.05). In all three of these models, being in a higher grade (p<0.001), male sex (p<0.001), and identifying as sexual minority (p<0.001) also remained independently associated with the outcomes (i.e., ever had sex, lifetime sexual partners, and sexual partners last 3 months). Conclusion: These results suggest that having an exclusionary sexual education policy climate affects high school students' sexual behaviors, even when controlling for individual-level factors. This suggests that young people's sexual health may be best served when sexual education is inclusionary and sex is discussed outside of the context of marriage and heterosexual sex. Future work should identify targets for policy change in order to help facilitate youths' healthy sexual development.

Presenting Author: Morgan M. Philbin

Poster Session 2



EVALUATING EMPLOYMENT QUALITY AS A SOCIAL DETERMINANT OF HEALTH IN THE NEW ECONOMY TREVOR PECKHAM,
(University of Washington), Anjum Hajat, Brian Flaherty, Kaori Fujishiro, Noah Seixas

Economic, social, technological, and political drivers have caused a number of changes in the labor market, especially the shift away from job security toward more “flexible” employment practices. Consequently, there has been a decline in the so-called Standard Employment Relationship (SER; i.e., permanent, full-time, regularly-scheduled work, with secure wages and benefits) and concurrent rise in non-standard employment arrangements. Economists have reported that net employment growth in the U.S. over the last decade has mostly occurred in non-standard arrangements, and as much as 30 million workers are currently classified as contract, contingent, fixed-term, or temporary. These precarious work arrangements are socially distributed such that women, people of color, immigrants, younger workers, and lower-skilled and lower-educated workers are disproportionately represented. While these changes in work organization have far-reaching consequences for the labor market experiences of millions of people, they have not been adequately examined from a public health perspective. Previous research on the health consequences of non-standard employment have mostly used single-dimensional constructs (e.g., temporary contract or perceived job insecurity). However, the multidimensional construct of employment quality (EQ), defined as the terms and conditions of the employer-employee relationship, is increasingly being identified as an important work-related determinant of health. EQ components include the type of contract, material benefits, hours and schedule, mobility opportunities, and workplace power dynamics. Health studies using multidimensional constructs of EQ have been restricted to Europe and Canada, yet this research may have limited generalizability to the U.S. due to differences in respective labor markets and social safety nets. To advance the conceptualization and measurement of employment arrangements within the U.S. labor market, we develop a multidimensional measure of EQ using latent class analysis (LCA), a modeling approach to identify latent subgroups within heterogeneous populations. To operationalize EQ, we leverage data from the General Social Survey (GSS), a nationally representative survey that includes rich information on employment conditions within the Quality of Work Life module. Based on similarity in workers’ responses to 11 objective indicators of EQ, we found that the U.S. workforce can be grouped into five distinct classes of EQ. One class resembles the historical conception of SER employment, while the other classes represent different versions of more precarious employment types. The EQ classes were associated with socio-demographic profiles of workers, organization-level features, and indicators of traditionally measured working conditions. Logistic regression analyses indicate that several EQ classes are significantly associated with poor self-reported general and mental health and low job satisfaction in comparison to the standard employment class, after controlling for demographics and traditional work-related hazards. While employment conditions have received less attention compared to other aspects of socioeconomic position, such as education and income, this research improves our understanding of how contemporary employment arrangements contribute to health and health inequities at the population level. The modifiable nature of employment makes it a critical and deserving determinant of health for future study. Improving precarious employment conditions may improve the health of millions of Americans, and particularly benefit demographic groups that are disproportionately impacted by low EQ.

Presenting Author: TREVOR PECKHAM

WORK IN POPULATION HEALTH RESEARCH (PART 1): THE ROLE OF WORK IN CREATING AND PERPETUATING SOCIAL INEQUALITIES IN HEALTH Kaori Fujishiro, (CDC/NIOSH), Emily Q. Ahonen

The absence of the work context in population health inequities research in the U.S. is perplexing since landmark studies used occupation as a marker of social position in the socio-economic health gradient. Some researchers have recently argued that work might be considered among the fundamental causes of population health status, and is at the very least a vital lever for progress toward equity. Yet, U.S. researchers have seldom used occupation to represent social position. This is a critical oversight; besides the importance of work in its own right, the work people do is heavily patterned by race, gender, age, geographic location, and educational attainment, and strongly influential on income. Although these factors have received substantial attention from health inequalities researchers, they do not replace the complex concept of work itself. Separate from the view of occupation as a marker of social position, the traditional approach to occupational health considers work as a source of hazardous exposures. This approach has been useful in identifying toxic materials and their health consequences (e.g., asbestos, carcinogens). However, because researchers in the two traditions seldom cross paths with each other, the full impact of work on health is difficult to grasp. We must expand upon the narrowly defined exposure-disease framework of traditional occupational health research, and at the same time recognize the multifaceted concept of work as a point of articulation for the relationships between people and structural and social institutions. Focusing on work is especially useful in understanding the intricate relationship between race/ethnicity and socioeconomic position. We will present several recent studies that illustrate the utility of work in health inequalities research. Occupational prestige, racial/ethnic privilege at work, racial composition of the workplace, and racial differences in experiencing beneficial aspects of jobs are among the topics we present. Through the research examples we present, we argue that the workplace is where socioeconomic and other inequalities both manifest themselves and are reaffirmed, and thus illuminate the features of social structure that create health inequalities. Once we gain this perspective, clearly focused interdisciplinary collaboration can be formed. Still, addressing work in population health research has challenges, including the complexity of the concept of work itself and very limited extant data that adequately queries work and health. We will propose some directions for future research as well as the need for new data that would facilitate the investigation of work within the framework of fundamental causes, which plausibly contribute to multiple health and disease states. Population health research can make employment relations and the workplace promising venues for social change.

Presenting Author: Kaori Fujishiro

WORK IN POPULATION HEALTH RESEARCH (PART 2): IMPROVING WORK AND HEALTH THROUGH COLLABORATION WITH EMPLOYERS AND WORKER ORGANIZATIONS Kaori Fujishiro, (CDC/NIOSH), Emily Q. Ahonen, Louis Kimmel

Occupational health interventions typically focus on removing health hazards from the workplace. While this approach remains important, there is opportunity to promote population health and well-being in a much broader way if we expand our view of work. Through collaboration with business and worker organizations, population health researchers can help design jobs with enhancing health in mind. A health equity approach to work requires improving work for all while simultaneously giving special attention to those groups that experience systematic disadvantage. Businesses are well-positioned to do the former, while worker organizations ensure that workers with less power can influence changes to work. Employers are a key link between populations and the broader structures of political and economic power which influence individuals' social positions. Businesses determine the employment arrangements available to people: the pay and other incentives, performance expectations and evaluation methods, benefits, scheduling, and flexibility to manage other aspects of life. Employers also determine the characteristics of the jobs they offer, such as whether the work provides for worker growth and development opportunities, or allows for workers to use their initiative and creativity to solve problems. These employment conditions and job characteristics, determined to maximize business gains, shape the individuals' experience of work, which may support or hinder health. Employers are increasingly aware of the link between healthy workforce and business gains, but current practices do not necessarily align the two. Worker organizations play a vital role in advocacy and action to better the conditions of employment and work that groups of people experience. They help workers to develop skills to advocate for improved pay, benefits, safe working conditions, and dignified treatment, thereby providing balance to the power dynamics inherent in employer/employee relationships. Recognizing workers holistically, grassroots worker organizations are also a link to the families and broader communities, making clear the ways in which good work is a community health issue. Partnership between academia and these organizations through participatory research will ensure that findings are meaningful to the community. When business interests and worker well-being coincide, changes can happen. An important role population health researchers can play is to make the connection clear by explicitly incorporating work in our research, and by serving as a link between businesses and worker groups as key stakeholders in that research. Partnering with business organizations will not only expand our understanding of population health in a rarely studied setting, but also have potential for effecting change directly in the organizations and workers' lives. By understanding firsthand that work impacts their health and life within and beyond the workplace, workers can drive changes for healthier and more just society. We will provide examples of instances where a population health research perspective has improved the capacity of businesses to consider health in the design of work. We will also present examples of partnership between worker organizations and academia. Well-conducted participatory research can validate the lived experiences of workers with academic rigor, which can inform employer policy changes that are meaningful to the community.

Presenting Author: Emily Q. Ahonen

PREDICTORS OF SUICIDE, HOMICIDE, AND ACCIDENTAL DEATH FROM ADOLESCENCE THROUGH MIDLIFE: NEW EVIDENCE FROM HIGH SCHOOL AND BEYOND John Robert Warren, (University of Minnesota), Chandra Muller, Eric Grodsky

Unintentional injuries, suicide, and homicide are the leading causes of death among Americans between the ages of 15 and 34 (Heron 2015; Kochanek, Arias and Anderson 2013). Although we know a great deal about the demographic correlates of death from suicide, homicide, and accidents, we know much less about the educational, behavioral, psychological, or other factors that may mediate the effects of sex and race/ethnicity on risk of death from these causes through early adulthood. Through what early-life social and educational processes or via what mechanisms do sex and race/ethnic differences in rates of suicide, homicide, and accidental death arise? We use new data on a large, nationally representative sample of adolescents in 1980 that has been followed through midlife in 2015 as part of the High School and Beyond (HSB) project. We model risk of death between ages 25 and 50 as a function of a wide variety of social, psychological, behavioral, educational, and other factors. None of these factors explain race/ethnic or gender differentials. However, we do find that the educational factors (e.g., attainment, test scores, course taking) that predict cause-specific mortality differ across causes of death. Heron, Melonie. 2015. "Death: Leading Causes for 2012." National Vital Statistics Reports 64(10). Kochanek, Kenneth D., Elizabeth Arias, and Robert N. Anderson. 2013. "How Did Cause of Death Contribute to Racial Differences in Life Expectancy in the United States in 2010?" NCHS Data Brief no 125. Hyattsville, MD: National Center for Health Statistics.

Presenting Author: John Robert Warren

RECONSIDERING POPULATION HEALTH APPROACHES TO TESTING SEXUAL MINORITY HEALTH DISPARITIES ACROSS MEASURES OF SEXUAL MINORITY STATUS Jessica Fish, (Department of Family Science, School of Public Health, University of Maryland), Evan Krueger

Introduction. Compared to heterosexual, sexual minorities (i.e., lesbian, gay, bisexual [LGB] and same-sex attracted people) evidence vexing health disparities. Epidemiological studies have capitalized on the recent inclusion of multiple measures of sexual minority status in large, population-based samples to document mental health and substance use disparities between sexual minority and heterosexual adults on the basis of sexual identity, behavior, and attraction (Bostwick et al., 2010; Fish et al., 2018, McCabe et al., 2009). This approach, however, is problematic for several reasons. First, modeling identity, attraction, and behavior separately largely replicates findings across measures of sexual minority status given that LGB people generally report same-sex attractions and behaviors. Second, estimating health risk on the basis of attraction and behavior alone does not account for the unique risk attributed to having a stigmatized identity – individuals who identify as LGB should theoretically differ from those who indicate same-sex attractions and behavior but do not identify as LGB (Meyer, 2003). In a two-study approach, we problematize the standard approach to estimating sexual minority health disparities and suggest alternative modeling techniques that account for the shared variance between sexual minority identity and sexual attraction and behavior. **Methods.** To demonstrate replicability, we used data from both the National Longitudinal Study of Adolescent to Adult Health (Add Health) and the National Epidemiological Study of Alcohol and Related Conditions (NESARC) to estimate sex-stratified models of sexual orientation disparities in alcohol and tobacco use disorders, major depressive disorder (MDD), and suicidal ideation across reports of sexual identity (heterosexual, lesbian/gay, bisexual), attraction, and behavior (exclusively other-sex, same-sex, both-sex). We first mirrored current standards by running sociodemographic adjusted logistic regression models for each outcome, separately for sexual identity, attraction, and behavior. We then estimated attraction and behavior models, with sexual identity included as a covariate. **Results.** As expected, sexual minority men and women demonstrated substance use and mental health disparities across sexual identity, attraction, and behavior. Further, many of the disparities estimated by attraction and behavior were attenuated when sexual identity was included as a covariate. These findings were largely replicated for men and women across outcomes for both samples. In Add Health models estimating disparities on the basis of sexual attraction, for example, both-sex attracted women were over 2.5 times as likely as other-sex attracted women to report past year MDD (aOR=2.68, 95%CI 1.95,3.69, p<.001): When models were adjusted for sexual identity, disparities for same-sex attracted women were attenuated (aOR=1.28, 95%CI .84,1.96, p=.251), though differences on the basis of identity remained between bisexual and heterosexual women (aOR=2.51, 95%CI 1.14,5.55, p=.023). **Discussion.** Our findings offer compelling evidence for the importance of estimating sexual minority health disparities in ways that account for the unique and shared effects of sexual attraction, behavior, and identity. We argue that this approach more accurately captures health risk for sexual minority populations and thus provides more focused policy and prevention strategies for improving the health of sexual minority populations.

Presenting Author: Jessica Fish

THE ASSOCIATION BETWEEN INTERPREGNANCY INTERVAL AND MATERNAL MORBIDITIES USING REVISED NATIONAL BIRTH CERTIFICATE DATA Dane De Silva, (University of Maryland), Dane A De Silva, Marie E Thoma

Background: Severe maternal morbidity, or unexpected outcomes during labor and delivery, can result in short-term and long-term health consequences, and is a contributor to maternal mortality. Like maternal mortality, maternal morbidity continues to be on the rise in the United States. Interpregnancy interval (IPI), or time between last birth and subsequent pregnancy, is associated with perinatal and maternal outcomes, but the optimal IPI varies depending on the outcome. Because these outcomes can be prevented, examining the relationship between IPI and maternal morbidities for high-risk women may help to create strategies or policies to improve maternal outcomes. **Objective:** To examine the relationship between interpregnancy interval (IPI) and selected maternal morbidities using near-national birth certificate data. **Methods:** We used revised birth certificate data from 2014-16, restricting to women who resided in the U.S. with a second or higher-order singleton birth. The following maternal morbidities were examined: (i) maternal transfusion of blood products, (ii) admission to intensive care unit (ICU), (iii) uterine rupture (restricted to women with a prior Caesarean delivery), and (iv) third- or fourth-degree perineal laceration (restricted to vaginal deliveries only). Risk ratios and 95% confidence intervals (CI) were estimated within IPI categories (<6, 6-11, 12-17, 18-23, 24-59, and 60+ months) using logistic regression. Models were adjusted for select maternal sociodemographic and pre-pregnancy health characteristics. **Results:** 29.1% of births occurred at an IPI of <18 months. The rate of maternal morbidities were as follows: 26.8, 12.7, 9.4, and 49.9 per 10,000 births for maternal blood transfusion, admission to ICU, uterine rupture, and perineal laceration, respectively. Adjusted models revealed that compared with 18-23 months, risk of maternal transfusion was highest among an IPI <6 months (aOR 1.35 [CI:1.24, 1.46]) and decreased towards the null with increasing IPI. Risk of admission to ICU followed a U-shaped curve compared with 18-23 months, and was similar for an IPI <6 months (aOR 1.16 [CI:1.02, 1.32]) and long IPI of 60+ months (aOR 1.18 [CI:1.08, 1.29]). Risk of uterine rupture among women with a prior Caesarean delivery was highest among short IPI <6 months (aOR 3.43 [CI:2.72, 4.32]) and decreased with increasing IPI. Risk of perineal laceration among women delivering vaginally increased with a long IPI of 60+ months (aOR 1.09 [CI:1.04, 1.15]). **Conclusion:** Associations between maternal morbidity and IPI varied by outcome. Compared with 18-23 months, extremely short IPI (< 6 months) was associated with increased risk for maternal blood transfusion, risk of ICU admission, and uterine rupture among women with a prior Caesarean delivery. Longer IPI (60+ months) increased risk for ICU admission and perineal laceration. Maternal health outcomes should also be considered when counseling and making recommendations regarding birth spacing.

Presenting Author: Dane De Silva

RESULTS FROM A COMMUNITY NEEDS ASSESSMENT LOOKING AT STOMACH CANCER PREVENTION AMONG NEW YORK CITY CHINESE AMERICANS Yi-Ling Tan, (NYU Langone School of Medicine), Simona Kwon, Janet Pan, Lynna Zhong, Emily Wong, Qiuqu Zhao, Chau Trinh-Sevrin

Background: Stomach cancer is the third most common cause of cancer death worldwide. In the US, stomach cancer incidence for Chinese Americans is nearly twice that for non-Hispanic whites. Cancer is the leading cause of death among Chinese New Yorkers who experience higher death rates for stomach cancer than other New Yorkers overall. The bacterium *Helicobacter pylori* (H.pylori) is the strongest risk factor for stomach cancer, with eradication of H.pylori the most effective prevention method for stomach cancer. Objective: Assess knowledge, attitudes and behaviors related to stomach cancer and H.pylori among Chinese Americans. This would be used to inform strategies for improving H.pylori prevention and treatment programs for low-income Chinese Americans in NYC. Methods: A mixed methods approach including qualitative interviews and resource and literature reviews were conducted. 15 qualitative key informant interviews were conducted among Chinese individuals, including those who were H.pylori infected or formerly H.pylori infected, and community-based stakeholders who served the target population, (e.g. health and social service providers). Resource and literature reviews were utilized to provide a comprehensive map of existing H.pylori medication adherence and stomach cancer prevention tools and resources, patient education materials, and health information for Chinese American immigrants. Results: Preliminary findings indicate low knowledge of H.pylori among NYC Chinese Americans and limited culturally and linguistically relevant health materials about stomach cancer available for this priority population. Conclusion: Culturally adapted and linguistically relevant materials, strategies, and programs are needed to address H.pylori infection-related health disparities in underserved, low-income Chinese American immigrant populations.

Presenting Author: Yi-Ling Tan

ENVIRONMENTAL JUSTICE AND HEALTH INEQUALITIES AMONG CHILDREN IN THE UNITED STATES: EMPIRICAL ANALYSIS OF NSCH 2016 Yuying Shen, (Norfolk State University)

It is well-documented that health is closely correlated with income, education, and several other social factors. While data on this socio-economic health gradient have been available for years, the important influence from neighborhood on health as well as the moral questions surrounding social health inequalities have only recently been addressed within the field of public health. In the past 15 years, interest in studying the relationship between area of residence and health has grown. The empirical relations between place and health have been observed at a variety of spatial scales, from census tracts to administrative units, and for a variety of health outcomes. However, research questions such as whether health inequalities between places simply reflect health inequalities between social groups or more significantly, do they suggest a contextual effect of place in shaping inequalities in health remain unanswered in current literature. Scholars have proposed to unpack individual-contextual interactions of social determinants of individual health outcomes. There are also proposed scholarly initiative in finding solutions to local problems by building on the strength and capacities of community institutions and enlisting them to be agents of change in promoting health. In addition, empirical research is needed to bring their contribution to framing discussions of justice and fairness for social determinants of health, contextual determinants in particular. The proposed study aims to fill this gap in current literature by empirically examining the health inequalities among children in the U.S. as well as the contextual determinants of such inequalities. Data from 2016 National Survey of Children Health (NSCH) will be used for analysis. Conducted by the National Center for Health Statistics of the U.S, NSCH was designed as a comprehensive study to assess multiple aspects of physical, emotional, and behavioral health, and their social and family contexts among a nationally representative sample of non-institutionalized American children aged 0-17 years. The respondent in the 2016 NSCH was the parent or guardian in the household who was knowledgeable about the health and health care needs of the child. Children's health in the proposed study will be assessed by the selected child's parent or guardian's response to questions about the selected child's health. Multilevel analytical approach will be used to examine determinants of health inequalities occurring simultaneously at several levels, from the individual, to neighborhoods. The empirical findings from the multi-level analysis of the structural drivers of the health disparities from the 2016 NSCH data will be discussed by relating to John Rawls' theory of justice to such determinants and Anthony Giddens' structuration theory.

Presenting Author: Yuying Shen

HIGH-STRESS REASONS FOR IMMIGRATION ARE ASSOCIATED WITH OBESITY AND DIABETES: AFRICANS IN AMERICA STUDY Sara M. Briker, (NIDDK, NIH), Rafeal L. Baker, J. Damascene Kabakambira, Christopher W. DuBose, David Berrigan, Anne E. Sumner

Background: Allostatic load represents physiologic dysregulation from stress-induced activation of the hypothalamic–pituitary–adrenal (HPA) axis and sympathomedullary pathway (SAM). Allostatic load is quantified using the allostatic load score (ALS), which measures the number of abnormal variables in 3 domains (metabolic, cardiovascular and inflammatory). Recent analyses by the Section on Ethnicity and Health have revealed that ALS varies depending on reason for immigration in African-born blacks living in the United States. High-stress reasons for immigration were asylum/refugee, work and study and low stress reasons were family reunification and diversity lottery. Now we seek to determine if there are differences in either behavior or cardiometabolic disease by stress group. Methods: The participants were 123 African-born blacks (67% male, age 41 ± 10 , range 22–62y) who came to the United States as adults and currently live in metropolitan Washington, DC. Countries of birth were in West (53%), Central (18%) and East (29%) Africa. Years in the United States were: 11 ± 10 , range 0.2–38. Participants had an oral glucose tolerance test (OGTT), anthropometrics and abdominal computed tomography (CT) scans to measure visceral adiposity. ALS was calculated using 10 variables: BMI, A1C, systolic BP, diastolic BP, pulse, HDL, cholesterol, homocysteine, C-reactive protein (CRP) and albumin. $ALS > 2$ was defined as high-stress and $ALS \leq 2$ was defined as low-stress. Smoking, alcohol consumption, sleep duration and exercise data were obtained by self-report. Results: Three reasons for immigration had mean $ALS > 2$: asylum/refugee, work and study. Two reasons for immigration had mean $ALS \leq 2$: diversity lottery and family reunification. ALS in the high-stress and the low-stress groups were: 2.8 ± 1.8 vs. 1.8 ± 1.3 , $P < 0.01$, respectively. Modest differences were observed between high and low stress groups for a number of biomarkers. The high-stress group tended to have higher waist circumference ($P = 0.06$), visceral adiposity ($P = 0.05$) and prevalence of obesity ($P = 0.08$). The high-stress group also tended to have higher fasting glucose ($P = 0.07$), A1C ($P = 0.08$), and prevalence of diabetes ($P = 0.07$). Two cardiovascular risk factors were significantly higher in the high-stress group: HDL ($P = 0.04$) and homocysteine ($P = 0.05$). However, neither systolic BP ($P = 0.57$) nor diastolic BP ($P = 0.94$) differed by group. Smoking ($P = 0.12$), sleeping less than 7 hours per night ($P = 0.14$), alcohol intake ($P = 0.48$) and exercise ($P = 0.88$) did not differ by group. Conclusion: Although data on immigrant health status upon arrival in the United States is not available, our results suggest that the effect of the HPA axis may be greater than that of the SAM axis. Larger sample sizes are needed to determine if some of the associations observed here are robust. Africans who came to the United States for high-stress reasons were more likely to be obese and diabetic than Africans who came for low-stress reasons. Future etiological and surveillance studies could consider addressing reasons for immigration and health status upon arrival in the US.

Presenting Author: Sara M. Briker

TRAINING AND CAREER DEVELOPMENT OPPORTUNITIES AT THE NATIONAL INSTITUTES OF HEALTH Juanita J. Chinn, (National Institutes of Health), Regina Bures, Rosalind King, Della White, Rebecca Clark

Training and career development programs at the National Institutes of Health (NIH) are designed with the trajectories of bench scientists and clinicians in mind. This poster illustrates how these trajectories map to the training and career development paths of demographers and population scientists. We provide an overview of the types of training and career development opportunities available through the National Institutes of Health (NIH), paying particular attention to mechanisms supported by the Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD) and the National Institute on Aging (NIA). An overview of the available non-clinical funding mechanisms, focusing on individual funding mechanisms and discussing key application components for the various mechanisms, will also be presented. At NICHD, population science and demography are primarily funded via the Population Dynamics Branch (PDB). PDB supports research and research training in demography, reproductive health, and population health within the mission of NICHD. Current PDB funding priorities include understanding contraception use and non-use, health and disease across the lifespan, and gene-environment interactions. At NIA, the Population and Social Processes (PSP) Branch in the Division of Behavioral and Social Research (DBSR) supports research and training on the causes and consequences of changes in social, demographic, economic, and health characteristics of the older population. Research on the effects of public policies, social institutions and health care settings on the health, well-being, and functioning of people — both over the life course and in their later years — is supported. International and comparative research is encouraged, as are interconnections with individual behavioral processes. Many population health scientists may be familiar with the NIH's institution training grants, or T32s, but NIH also offers a variety of individual fellowships (F30, F31, F32). The F30 program supports MD/PhD fellows. The F31 program supports individual pre-doctoral fellows with supervised research training in specified health and health-related areas leading toward the research doctoral degree and the F32 individual post-doctoral fellows provides postdoctoral research training to broaden scientific background and extend potential for research in specified health-related areas. The primary objective of all NIH career development (K) programs is to prepare awardees to successfully compete for NIH R01 grants. Popular K mechanisms include the Pathway to Independence Award (K99/R00) and the Mentored Research Scientist Career Development Award (K01). The K99/R00 provides support for an initial mentored research experience (K99) followed by independent research (R00). The goal of the K99/R00 program is to support highly qualified, postdoctoral researchers as they establish themselves in a specific scientific area to facilitate their securing an independent research position. The K01 mechanism supports early career research scientists committed to research, in need of both advanced research training and additional experience. The NIH of individual fellowships (F30, F31, F32), popular career development (K) programs, and the less commonly used K programs (K12, which is an institutional K, and the K25) will be detailed throughout the poster including how to prepare a successful training or career development application.

Presenting Author: Juanita J. Chinn

DOES RECEIVING SUBSIDIZED HOUSING IMPROVE MENTAL HEALTH? RESULTS FROM GREATER TORONTO James Dunn, (McMaster University)

Introduction: It is commonly claimed that affordable housing is an important determinant of health, but there are very few longitudinal studies of the effect of housing on health. This paper reports the findings of a quasi-experimental study of the effects of receiving subsidized housing on the common mental disorders at 6-, 12- and 18-months after placement in subsidized housing in the Greater Toronto Area (GTA) West. Methods: We recruited and administered a baseline questionnaire to a sample (N=504) of waitlisted applicants for subsidized housing in four municipalities in the GTA West, who were estimated to be near the 'top' of the waitlist. We then waited for participants to be placed in subsidized housing and conducted follow-up interviews with those housed at 6-, 12- and 18-months after placement (N=137) and also with those not housed (N=304) at the same intervals. We use longitudinal data analyses with hierarchical modelling to investigate differences between intervention and comparison groups. Results: Overall, the results show small short-term improvements in selected outcomes measuring sub-clinical depressive (CES-D-R) and anxious symptomatology (K-6) and general healthy functioning, with some evidence of important gender differences. Discussion: Receiving subsidized housing appears to result in small improvements in health, but this does not necessarily diminish the importance of subsidized housing. Such housing typically does not result in a large improvement in post-shelter disposable income because the subsidy is modest relative to income. Moreover, the benefits of improved security of tenure associated with subsidized housing may only be relevant to households that experienced acute insecurity at baseline. The current subsidized housing model may not be potent enough to produce a large improvement in health, particularly since other social determinants of health in peoples' lives largely remain unchanged.

Presenting Author: James Dunn

A BIODEMOGRAPHIC APPROACH TO ESTIMATING APOE GENOTYPE-SPECIFIC MORTALITY Jordan Weiss, (Population Studies Center, University of Pennsylvania)

Introduction: The absence of a definite explanation for late-life mortality patterns has stimulated a lively debate on longevity and its. Although it's generally accepted that mortality rates decelerate in late-life after following the exponential increase described by the Gompertz law, the mechanisms underlying this deceleration remain unclear (Horiuchi and Wilmoth 1998; Masoro and Austad 2006). Understanding these mechanisms is critical for elucidating obtaining better population estimates at advanced ages which may affect public pension programs, social and medical expenditures, and old-age dependency ratios. Studies of mortality dynamics have hypothesized that late-life mortality deceleration may be explained by changes in population composition that reflect selective mortality in heterogeneous subpopulations (Vaupel et al. 1979; Vaupel and Yashin 1985). That is, as cohorts age, individuals who are less robust tend to die first leaving more robust individuals to define the mortality rate of the population at advanced ages. The aggregate effect would be a disproportionate representation of robust individuals in the population which could contribute to the mortality deceleration observed at advanced ages. This study contributes to the existing literature by investigating whether genetic heterogeneity explains late-life mortality deceleration. Specifically, I examine age patterns of APOE genotype-specific mortality rates across 18 cross-sectional and longitudinal studies representing 10 countries to answer two questions. First, how do APOE-specific mortality risks change with advancing age? Second, are the observed patterns of mortality by APOE genotype consistent with a heterogeneity model? The APOE gene is a major cholesterol carrier that supports lipid transport and injury repair in the brain and is believed to increase mortality risk through its association with increased risks of ischemic heart disease and Alzheimer's disease. To date, APOE remains the most well-documented gene to be consistently associated with longevity. The three major allelic variants (e2,e3,e4) form six possible genotypes (e22, e23, e24, e33, e34, and e44). The e33 genotype is the most common and taken as the reference genotype relative to the protective e2 and deleterious e4 alleles. In some populations, the e4 allele has been associated with increased mortality (Christensen et al. 2006) making it an ideal candidate for estimating relative mortality risks. Preliminary results: Relative to carriers of the APOE e33 genotype, carriers of the APOE e23 genotype face a reduction in mortality risk of 7%. The APOE e34 and e44 genotypes were associated with an increased mortality risk of 39% and 222% respectively. However, these deviations from the relative mortality risk of the APOE e33 genotype converge over time suggesting a decline in the effects of the APOE gene on mortality risk with age. The e23 genotype was associated with a mortality risk that was 7% lower than e33 carriers. The e34 and e44 genotypes were associated with an increased mortality risk of 39% and 222%, respectively.

Presenting Author: Jordan Weiss

PREVALENCE OF FRAILITY AMONG OLDER ADULTS IN THE UNITED STATES: EVIDENCE FROM THE HEALTH AND RETIREMENT STUDY Jordan Weiss, (Population Studies Center, University of Pennsylvania)

Importance: Recent gains in life expectancy have not necessarily translated into gains in healthy life expectancy. This phenomenon has prompted increased attention to measuring health and well-being in later-life. Although much research has focused on clinical indicators of health, a growing number of studies are taking a more holistic approach that includes psychosocial, functional, and clinical health. One such measure that has emerged in recent decades is frailty. Frailty not only reflects an individual's state of overall health, but also indicates their susceptibility to develop other chronic diseases. However, to date, little is known about the prevalence of frailty or how its incidence differs across cohorts. Objective: To estimate the prevalence and cohort differences in the incidence of frailty. Design, setting, and participants: The current study used data from the nationally representative and longitudinal Health and Retirement Study (HRS). The HRS has surveyed more than 30,000 US residents over the age of 50 years and their spouses, with survey assessments every two years since 1992. The current study uses a sample of 18,174 respondents who were surveyed in the year 2000. Main outcomes and measures: I operationalize frailty using two leading methods: the frailty phenotype proposed by Fried and colleagues and the Rockwood Frailty Index proposed by Rockwood and colleagues. The frailty phenotype is a continuous measure that can be categorized into non-frail, pre-frail, and frail. The Rockwood Frailty Index is also a continuous measure that can be categorized into relatively fit, less fit, least fit, and frail. Multivariate logistic regression was used to investigate the relationship between birth cohort and frailty prevalence. Results: On average, respondents in the sample were 67.5 years (95% CI, 67.3-67.7 years) in 2000. The sample was 57.4% female and more than 70% of respondents had a high school/GED level of education or above. The prevalence of frailty measured via the frailty phenotype was 14.3% (95% CI, 13.6%-14.9%) compared to 11.1% (95% CI, 10.6%-11.6%) measured via the Rockwood Frailty Index. After adjusting for age and education, no cohort differences were observed. Conclusions and relevance: The aging of our population calls on the need to identify adults who are at greater risk for adverse health outcomes. Frailty is one such tool that has been validated in a wide-range of study. Here, I show that the prevalence of frailty in the United States is high relative to some other diseases. Monitoring the incidence and prevalence of frailty as well as its determinants will be important for maintaining the health and well-being of old adults.

Presenting Author: Jordan Weiss

GRANDPARENTS' SES AND GRANDCHILDREN'S HEALTH--PATHWAYS ACROSS GENERATIONS Ying Huang, (University at Albany, SUNY)

It is well understood that parental socioeconomic status exerts strong influences on children's health and cognitive outcomes, with children from higher-socioeconomic status (SES) families outperforming those from lower-SES families. However, despite years of research on improving child health and cognitive outcomes, disparities by SES have remained relatively constant over time, suggesting that researchers lack a full understanding of the determinants and processes producing these disparities. Grandparental influences represent one area that may help fill this gap in knowledge. Indeed, family origins of child wellbeing that go beyond two-generation framework may be particularly important because poor child health and low cognitive skills impedes later health and SES attainment and represents a potential pathway by which inequality is transferred across generations (Palloni 2006). In this paper, I investigate the intergenerational linkages between grandparents' socioeconomic status and grandchildren's health. Drawing on longitudinal data from the Panel Study of Income Dynamics (PSID), I examine the mechanisms through which grandparents' socioeconomic status (SES)—characterized by wealth and education—impacts the health of grandchildren, both directly and indirectly via the parental generation. I further test how grandparents' SES effects vary between white and African American grandchildren. I use marginal structural model (MSM) with inverse probability weighting to properly adjust for the parent generation's life course experiences. Results show that the socioeconomic status of grandparents plays an important role in influencing the cognitive development and health status of their grandchildren. More importantly, a nontrivial portion of the grandparental effect operates through the middle generation's life course health and socioeconomic experiences. These indirect transmission processes via the middle generation is stronger for low-income African Americans than for white counterparts.

Presenting Author: Ying Huang

CONTROLLING HYPERGLYCEMIA AMONG MINORITY POPULATIONS (CHAMP) Stacy Ignoffo, (Sinai Urban Health Institute), Nazia Saiyed, Maureen Banjamins

BACKGROUND: The acute and long-term consequences of diabetes and uncontrolled hyperglycemia are well known, as are the race/ethnic disparities associated with these outcomes. Providing education through text messaging or community health workers (CHW) may be two plausible approaches to improve diabetes-related outcomes; however, gaps in knowledge remain. Controlling Hyperglycemia Among Minority Populations (CHAMP) is a randomized controlled trial to test the efficacy of two interventions (text message education and CHW education) designed to: (1) reduce uncontrolled hyperglycemia (defined by HbA1c \geq 9%) and (2) increase diabetes-related knowledge, health care utilization, and engagement in self-management among adults with diabetes visiting a safety-net health system in Chicago. **METHODS:** CHAMP used electronic medical records, clinic visits, and referrals to recruit patients from three sites (two in-patient and one outpatient clinic). Participants were randomized to one of three study arms. Individuals in the text group received text messages related to diet, physical activity, health care utilization, and other self-management topics for six months. Individuals in the CHW group received six monthly home-based, individualized education and goal setting visits (mirroring the topics covered by the texts) by a trained CHW, and monthly phone calls in between visits. Control group participants received the usual care provided by the hospital or clinic. All participants completed an interview and HbA1c test at enrollment and 6-8 months later. We also collected qualitative data from a sample of participants to better understand the outcomes and perceptions of the interventions. **FINDINGS:** CHAMP recruited 274 individuals to participate in the study, with 222 completing the baseline and 6-month data collection. Participants in all arms experienced improvements in diabetes control as measured by HbA1c. Participants in the CHW group who completed all home visits were significantly less likely to have a higher A1c at 6 months than the control group. However, we did not see significantly larger improvements in diabetes control as compared to the control group. As much of the education included in both interventions focused on changing behaviors, which may have a gradual impact on HbA1c measures, we would expect to see continued improvement in diabetes control after the intervention ends. Participants in both intervention groups expressed high levels of satisfaction with the interventions and its perceived success in helping them to manage their diabetes. **POPULATION HEALTH IMPLICATIONS:** CHAMP addresses gaps in the literature by assessing the efficacy of using text message and CHW interventions to improve diabetes management among a disadvantaged, minority population. These innovative strategies to educate and empower individuals to take control of their disease need to be better understood by providers serving low-income and minority populations because of the increased burden of diabetes and other chronic conditions in these populations. Therefore, it is critical to conduct studies such as the current one in institutions serving patients from the areas of highest need. CHAMP provides valuable insight on the integration of a health promotion research project into clinical care at multiple sites, and has paved the way for the implementation of multidisciplinary approaches to diabetes management within our healthcare system.

Presenting Author: Stacy Ignoffo

HEALTH SYSTEM INTEGRATION OF AN EHR-BASED HEALTH LITERACY-INFORMED INTERVENTION TO REDUCE PARENT MEDICATION ERRORS Ashley Bagheri, (NYU Langone Health), H. Shonna Yin, Rachel Lebow, Elizabeth Haines, Jennifer Melgar, Evelyn Cruzate, Sumaiya Tasneem, Claudia Pulgarin

A randomized control trial in the pediatric emergency department (ED) at Bellevue Hospital demonstrated the efficacy of HELPix (patient- and regimen-specific bilingual (English/Spanish), plain language, pictogram-based medication instruction sheets to facilitate provider communication of medication information) in decreasing dosing errors (HELPix vs. control: 5.4% vs. 47.8%, $p=0.0002$) [observed dosing assessment] and non-adherence (9.3% vs. 38.0%, $p=0.002$). The study demonstrated the feasibility of using HELPix in the "real world" setting, with ED providers creating instruction sheets for ~60% of eligible children. Developing a model for successful health system integration, especially within EPIC, one of the most commonly used Electronic Health Records (EHR) in the country, is essential for the broad dissemination of health literacy-informed tools, like HELPix, which support effective provider counseling and promote quality care delivery. Our primary objective is to demonstrate the effectiveness and feasibility of integrating HELPix into the EPIC EHR within the NYULMC health system as a starting point for large scale dissemination across health care organizations. While we do not have baseline data on dosing error rates and adherence at NYU Langone Brooklyn to date, we know that the patient population served there consists of largely low income, immigrant families and anticipate error rates similar to that seen at Bellevue. Based on our prior studies, we also know that relative error rate reductions were similar across literacy groups, suggesting that populations across the NYULMC system will likely benefit from the HELPix. To address our primary objective (parent dosing error and adherence), a pre-/post HELPix implementation evaluation of effectiveness will be conducted with families seen in the NYU Langone Brooklyn ED ($n=240$; 120 pre-, 120 post-implementation) will be assessed by EPIC chart review from August 2017 to December 2018. To address the exploratory sub-analyses regarding hospital revisits, we will conduct a chart review for all children admitted to the ED, prescribed short course liquid medication (≤ 14 days) from August 2017 to December 2018. Feasibility will also be examined in the NYU Langone Brooklyn ED (utilization, provider use of counseling strategies). In addition, providers will be assessed pre-/post-implementation. Pilot testing will be conducted by clinical staff as well as a small group of ED providers ($n=5$) to ensure seamless integration into EPIC/clinical workflow; an iterative process will take place with revision and modification of the app until identified issues are resolved. HELPix will be made accessible in the ED, clinic/urgent care, and inpatient settings. After HELPix implementation, a separate group of 120 study subjects will be prospectively enrolled in a similar manner to the pre-HELPix implementation period. Subjects will be enrolled within two weeks after medication completion date. As in the Pre-HELPix Implementation, one month after the index visit, EHR chart reviews will be done to assess unplanned revisits (e.g. urgent care, ED, admission) for all children prescribed eligible medications in the ED.

Presenting Author: Ashley Bagheri

MUSLIM RACIALIZATION AND THE FORMATION OF BIRTH OUTCOME DISPARITIES IN CALIFORNIA, 1997-2015 Elyas Bakhtiari, (William and Mary)

Previous research suggests anti-Muslim discrimination may have adversely affected the health outcomes of Arab Americans in the period after September 11, 2001. However, two important questions remain. First, to what extent did similar discrimination-linked social stressors affect the health of other immigrant and ethno-racial minority groups from nearby regions of the world, such as non-Arab Muslims and non-Muslim South Asians? Second, has there been a long-term change in health risks and outcome patterns associated with prolonged exposure to discrimination-linked stressors for these groups after 2001? In general, immigrant subpopulations from the Middle East, Central Asia, and South Asia have received little empirical attention in the health sciences literature, in part because of the lack of identifying data in many health records and their formal racial classification as white or Asian. This study aims to build on previous research that used name-matching techniques to probabilistically identify individuals' nationality based on naming conventions. Such methods have proven effective for identifying Arab populations, and this study innovates by expanding classification criteria to include non-Arab Muslims, such as groups from Iran and Afghanistan, and likely non-Muslims from nearby regions of South Asia. I rely on birth outcome data from California vital statistics records, 1997-2015, to build on previous research in two ways. First, I examine 19 years of birth outcome patterns to look beyond the immediate post-9/11 period and test for long-term changes in birth outcomes for Arabic and non-Arabic populations. Second, I interrogate how processes of boundary construction—specifically, the racialization of perceived Muslims—had an impact on groups who often do not share a Muslim identity, such as South Asian populations. Results suggest that all three groups—Arabs, non-Arab Muslims, and South Asians—saw a spike in low birthweight births in the period immediately after September 11, 2001, likely due to stress associated with an increase in hate crimes and other forms of discrimination. Moreover, all three groups experienced a long-term increase in rates of low birthweight births over the 19-year period. From 1997 to 2015, the rate of low birthweight births increased by approximately 17% for South Asian mothers, 25% for Arabic-named mothers, and 10% for non-Arab Muslim mothers. In contrast, the rate of low birthweight births for non-Hispanic white mothers changed less than 3% during the same period. The results suggest Muslim racialization—or the extension of racial meaning to a previously racially unclassified social group—can act as a determinant of health for both Muslim and non-Muslim groups. This has implications for public health, as these groups have often been overlooked in population health research but may be disproportionately exposed to risk factors. The potential formation of a health disparity after 2001 also has theoretical implications for both the conceptualization and operationalization of discrimination and group identity in health disparities research.

Presenting Author: Elyas Bakhtiari

ANALYSIS OF THE RELATIONSHIP BETWEEN NEIGHBORHOOD SOCIAL AND ENVIRONMENTAL FACTORS AND NEIGHBORHOOD DISEASE BURDEN Adam Perzynski, (The MetroHealth System, Case Western Reserve University, and Global Health Metrics, LLC), Eamon Johnson, Isaac Nicholas, Douglas Gunzler

Researchers and health care organizations have growing interest in making use of neighborhood and area-based indicators to improve understandings of population health. Improvements in computing and greater availability of area estimates of health and social factors have created new possibilities for scientific analysis. We sought to create a neighborhood health risk scoring approach that uses a broader array of indicators than those available in single data sources (e.g. American Community Survey) and conduct community level validation of the health risk prediction. Census tract data were obtained from the Centers for Disease Control (CDC), Bureau of Labor Statistics, American Community Survey, Federal Communications Commission, Environmental Protection Agency, and State and Local Health Departments. A structural equation modeling (SEM) approach was used to develop a composite risk estimate of social and environmental factors for all United States census tracts. Factors included poverty, overall socioeconomic status, food environment, employment, education, air quality, home vacancy and internet access. Path analysis in an SEM framework was then used to evaluate the predictive validity of the latent variable neighborhood risk score, including only those census tracts for which Centers for Disease Control 500 Cities health data was available. Analyses were conducted using SPSS and AMOS. A total of 28,004 census tracts were included in the final analytic dataset. The primary outcomes were the proportion of residents with \geq 14 days of bad mental and physical health. The primary hypothesis was that the broadly constructed neighborhood risk score would have a large effect on community health. Preventive service use, unhealthy behaviors and prevalence of chronic conditions were included as covariates. R-squared results were .890 (95% CI .887-.892) and .940 (95% CI .938-.941) for mental and physical health respectively. The composite risk score had a standardized total effect of .823 (95% CI .820-.827, $p < .01$) on mental health and .824 on physical health (95% CI .819-.828, $p < .01$). Results of this analysis indicate that social and environmental factors have a powerful, fundamental influence, explaining a large share of community level variation in health and disease burden. Health care providers, public health workers and health policy makers can potentially make use of area-level indicators to better understand the root causes of community level variation in the burden of health and disease.

Presenting Author: Adam Perzynski

DEMENTIA-FREE LIFE EXPECTANCY FOR BLACKS AND WHITES: PREVALENCE-BASE LIFE TABLES APPROACH Mateo Farina, (University of Texas at Austin), Mark Hayward, Eileen Crimmins, Jung Ki Kim

Older Black Americans' risk of cognitive impairment is almost three times the risk for white Americans. At the same time, black mortality is significantly higher than white mortality until individuals approach advanced old age (e.g., 85 years). These patterns point to a racial divide in the length of life lived with and without dementia – a life time experience determined by the intersection of dementia and mortality experience. This study is aimed at clarifying the racial divide in dementia-free life expectancy. Moreover, given recent evidence pointing to a potential increase in dementia-free life in the American population, we evaluate whether this increase occurs similarly across the two major race groups. How the race gap in dementia combines with the race gap in mortality to determine race differences in the length of life with and without dementia, however, is still unknown. In addition, trends in blacks' and whites' mortality and dementia experiences are likely to be contributing to trends in racial inequality in dementia-free life expectancy (DFLE). Whether rapid changes in educational attainment in the older population, an important contributor to cognitive reserve, is also contributing to trends in dementia-free life expectancy is also unclear. Drawing on the Health and Retirement Survey (2000-2014), we use prevalence-based multistate life table models to calculate expected years of life with and without dementia for US blacks and whites ages 65 years and older over the period. We also explore how the race gap in DFLE has changed within educational attainment classes to gain insights into the ways in which educational composition changes may be affecting trends in the racial gap in DFLE. This research will document in important ways the differential burden of dementia in the older American population and how this burden may be changing over time. Understanding the race disparity in cognitive health among older Americans has important policy implications for anticipating the needs of individuals, families, and communities in grappling with a critical feature of aging.

Presenting Author: Mateo Farina

HELPING CHICAGO'S WESTSIDE ADULTS BREATHE AND THRIVE: A HEALTHY-HOMES INTERVENTION Nazia S. Saiyed, (Sinai Urban Health Institute, Sinai Health System), Stacy Ignoffo, David Mata, Helen Margellos-Anast

BACKGROUND: Asthma disproportionately affects non-Hispanic Black and Puerto Rican people and individuals living below the poverty line. The home environment can have a significant impact on asthma control. Studies have proven the effectiveness of healthy homes-based asthma interventions in improving asthma outcomes among children, but there is limited evidence in adults. **Helping Chicago's Westside Adults Breathe and Thrive** sought to determine whether an asthma education and healthy homes intervention led by a Community Health Worker (CHW) hired from the community being served is an effective means to improve asthma outcomes and housing conditions among adults living in some of Chicago's poorest neighborhoods. **METHODS:** Referrals were received via case managers at public housing developments, outpatient clinics, and the emergency department at a safety-net hospital in Chicago. Referred individuals who met health criteria and agreed to participate were enrolled in a year-long home-based CHW intervention. The CHWs provided individualized asthma self-management and healthy homes education, including: asthma pathophysiology, symptom recognition, correct use of quick-relief and controller medications, and avoiding asthma triggers. CHWs also conducted three comprehensive home environmental assessments and helped participants coordinate with landlords to address environmental issues. Challenging cases were referred to a local tenants' rights organization. **PRELIMINARY FINDINGS:** We enrolled 302 adults between December 2013 and December 2016 with 191 individuals completing the intervention. There were statistically significant improvements in asthma control (threefold increase in the percent of participants with controlled asthma), emergency department visits (28% reduction), asthma-related quality of life (average increase of 0.8 points out of 7), and symptom frequency (50% reduction). CHWs helped participants gain access to needed medications and improve their medication technique. Improvements were seen in some home environmental conditions, including the presence of mold, pests, and excessive dust. More comprehensive analyses of home environmental issues and cost-effectiveness of the intervention are underway. We identified several challenges in working with this population, including: low retention, reluctance to ask landlords to address moderately severe housing issues out of a fear of retaliation, and personal and family issues (mental illness, drug use, and other physical illnesses) taking precedence over addressing asthma. **POPULATION HEALTH IMPLICATIONS:** A healthy homes-based educational intervention was successful in reducing asthma severity, improving quality of life, and decreasing urgent health resource utilization for adults with asthma living in some of Chicago's poorest neighborhoods, though the improvements for adults were slightly lower than those for children in a similar intervention. Participants were often able to address mild housing issues and reduce exposure to asthma triggers through behavioral changes. Moderate-to-severe housing deficiencies were present in several households, but could not always be resolved. This study provides support for stricter enforcement of existing laws promoting good housing quality and protecting tenants' rights, which would provide a substantial benefit to individuals with poorly controlled asthma living in impoverished neighborhoods and may help to reduce disparities in asthma prevalence and severity. The recently-passed smoking ban in public housing is a promising start and we expect it to positively impact many of this study's participants.

Presenting Author: Nazia S. Saiyed

SUBJECTIVE AND OBJECTIVE SOCIOECONOMIC DISADVANTAGE IN CHILDHOOD AND INCIDENT DEPRESSION IN ADULTHOOD AMONG MIDDLE- TO OLDER-AGED WOMEN IN THE SISTER STUDY Amanda M. Simanek, (University of Wisconsin-Milwaukee), Helen C.S. Meier, Aimee A. D'Aloisio, Dale P. Sandler

Background: Early life socioeconomic disadvantage (SD) has been linked to later life depression in a growing number of studies. Understanding of the relative impact of objective versus subjective childhood SD on depression onset in adulthood, and whether these associations are independent of later life socioeconomic factors remains, however, limited. Methods: We examined the association between objective (i.e., highest level of household education at age 13) and subjective (i.e., family income relative to others majority of childhood and childhood food insecurity) SD in childhood and self-reported clinical depression diagnosis among 47,765 women in the prospective Sister Study cohort who were free of depression as of age 30 (mean follow-up 23.9 (\pm 9.9) years since age 30). We used Cox proportional hazard models with age as time scale to estimate the hazard ratio (HR) and 95% CI for the association between each measure of childhood SD and incident depression, adjusting for women's mother's age at time of birth, household composition at age 13 (two-parent, single-parent, or other), race/ethnicity (non-Hispanic White, non-Hispanic Black, Hispanic or Other), birth cohort and educational attainment (HS). Results: A total of 8,246 (17.3%) women reported incident diagnosis with clinical depression (mean age of onset 45.0 (\pm 8.8) years). Women who reported being poor (versus well-off) or experiencing food insecurity in childhood had 1.26 (95% CI: 1.11, 1.42) and 1.36 (95% CI: 1.27, 1.46) times higher hazard rate of depression, respectively. In contrast, there was no association between highest level of household education at age 13 (HS) and depression onset in adulthood (HR 0.97, 95% CI: 0.91, 1.03). Conclusions: Our findings suggest that perceived SD experienced in childhood may be a more important predictor of depression onset in mid- to late- adulthood than objective measures of childhood SD among U.S. women, independent of educational attainment.

Presenting Author: Amanda M. Simanek

INVESTIGATING JOINT INFLUENCES OF PEERS & PUBERTY ON ADOLESCENT PHYSICAL ACTIVITY Mark C. Pachucki, (University of Massachusetts, Amherst), Lindsay T. Hoyt

Adolescent social relationships and pubertal development are important social and biological determinants of physical activity (PA). However, little research has attempted to disentangle possible joint influences of these factors, because they tend to be evaluated in separate scientific disciplines. Thus, little is known about how pubertal influences on PA may counteract, reinforce, or be otherwise confounded by peer influences. It is also unknown how peer effects on activities may vary by pubertal stage, gender, or race/ethnicity. Peer puberty effects may be especially important for girls (who develop earlier than boys) and Black and Hispanic youth (who typically develop earlier than white and Asian youth). Network analysis can address this complexity by discerning how social relationships and social context interact with puberty to shape PA. The goal of this study is to evaluate how social relationships and two different measures of pubertal development may independently and jointly influence PA behaviors among diverse adolescents. High-quality nationally representative data from the National Longitudinal Study of Adolescent to Adult Health (Add Health) are analyzed using stochastic actor-based social network models to estimate interactive effects of social (friend) and biological (pubertal) influences on adolescent PA behaviors in three different schools. Physical activity was measured by summing participants' frequency of three types of activities: low-intensity exercises, active sports, and several physical activities conducted on wheels. Stage-normative pubertal status was assessed through gender-specific physical development questions including breast size, body curviness, age of menarche (if occurred) for girls; underarm hair, facial hair, and voice change status for boys. Relative pubertal timing was assessed with the question, "How advanced is your physical development compared to other boys/girls your age?" Longitudinal stochastic actor-oriented network models which account for statistical dependence between observations were used to estimate pubertal similarity and peer puberty effects (Wave 1) on tie formation and physical activity change (Wave 2), controlling for gender, dyadic covariates (gender similarity, physical activity similarity, being in same grade). Preliminary findings suggest that depending upon a school's racial composition, perceptions of one's own pubertal status relative to peers may influence friendship choices more than measures of actual physical development, which may then shape physical activity. Results from 3 schools indicate that in racially homogenous schools, more physically advanced adolescents are 1.2 times more likely to peers nominate them as friends. However, in racially diverse settings, having a relative puberty perception that is similar to another person makes an individual 1.4 times more likely to form a friendship with them. Additionally, in one racially homogeneous school there was evidence of social influence on physical activity. Specifically, a participant whose friends' average physical activity was one unit higher or lower than their own was 3.8 times more likely to modify her physical activity by one unit closer to her friends' average level of activity. Sensitivity analyses currently being conducted will adjust for weight status, as well as estimate relationships in four other schools of different sizes and varied regions of the country to examine stage-normative vs. relative pubertal associations with physical activity.

Presenting Author: Mark C. Pachucki

INTERACTIONS OF CULTURAL AND INDIVIDUAL CHARACTERISTICS EXPLAIN LATINOS' NEIGHBORHOOD ENVIRONMENTAL PERCEPTIONS Lilian Perez, (National Cancer Institute), John Ruiz, David Berrigan

Background: Residents who perceive their neighborhood environments as walkable are more likely to walk or engage in physical activity near their home. Alternatively, those who walk more in their neighborhood can be more aware or critical of their environmental conditions. In the US, the least active populations (e.g., immigrants, women, and low-SES individuals) commonly report poor neighborhood conditions such as low safety. It is currently unknown how cultural, socio-demographic, and behavioral characteristics interact to explain neighborhood environmental perceptions, particularly among immigrant populations such as Latinos. The aim of this study was to examine associations between acculturation and perceptions of neighborhood environmental attributes in a nationally-representative sample of Latinos, and to test the moderating effects of socio-demographic characteristics and walking behaviors on these associations. Methods: Cross-sectional data from 4,417 self-identified Latinos (53% female; 60% foreign-born) in the 2015 National Health Interview Survey Cancer Control Supplement were analyzed. Respondents evaluated 10 neighborhood environmental attributes: seeing people walk; presence of two types of walking supports (e.g., sidewalks); presence of four types of destinations (e.g., cultural/entertainment destinations); and three different safety concerns (e.g., crime). Acculturation measures included nativity status (US- or foreign-born) and language preference (Spanish or English/bilingual). Respondents also reported socio-demographics (gender, education, income) and frequency of leisure and transportation walking. Age-adjusted logistic regression models examined associations of the acculturation, socio-demographic, and walking variables with each perceived environment attribute (outcomes). Models tested 10 two-way interaction terms between the two acculturation and five socio-demographic/walking variables. All models used the sample weights and accounted for the complex survey design. Results: Overall, findings showed moderating effects of gender and education on associations between acculturation and some of the perceived neighborhood environmental attributes. Specifically, there were significant interactions ($p < .005$) between nativity status and education for seeing people walk and presence of cultural/entertainment destinations. Those interactions showed that among those with high education, the US-born were 20% more likely to report seeing people walk and 40% more likely to report cultural/entertainment destinations in their neighborhood than the foreign-born. There were also significant interactions between language preference and gender for perceived safety from traffic and safety from crime. That is, among men, the English-speakers were 30% more likely to perceive their neighborhood as safe from traffic and 70% more likely to perceive it as safe from crime compared to those preferring Spanish. Conclusion: Results suggest that neighborhood environmental perceptions among Latinos are heterogeneous across cultural, education, and gender subgroups. US-born Latinos with high education and English-speaking Latino men evaluated their neighborhood environments as amenable to walking, which may be important for motivating and sustaining their physical activity in their neighborhoods. To promote physical activity equitably across the Latino population, interventions targeting environmental barriers to physical activity need to account for the cultural and socio-demographic differences in how Latinos experience their environments.

Presenting Author: Lilian Perez

THE IMPACTS OF THE PSSN ON MENTAL HEALTH IN RURAL TANZANIAN YOUTH, AND THE MODERATING EFFECTS OF SOCIAL SUPPORT Leah Prencipe, (UNICEF Office of Research Innocenti), Tia Palermo, Tanja Houweling, Frank van Lenthe

PURPOSE: This study investigates the causal effect of Tanzania's flagship social protection program on mental health outcomes of youth aged 14-28 by testing whether the PSSN reduces depressive symptoms 18 months post intervention. Further, we test how social support at baseline may moderate programme impacts on depressive symptoms. METHODS: The study utilizes a cluster randomised control trial (RCT) design to test the impacts of the Productive Social Safety Net (PSSN) on youth wellbeing in Tanzania. As part of the PSSN, regular cash payments are provided to participating households on a bi-monthly basis (including an unconditional base transfer and additional amounts conditional on health check-ups and children's school attendance). Additional components of the PSSN include livelihoods training and support and a public works programme (PWP) to supplement household incomes during the lean season. Data were collected on the psychosocial status for youth aged 14-28 years old at baseline, and then again 18 months post intervention in intervention and control locations (panel N=889). The primary outcome variables were: 1) an indicator of depressive symptoms using the 10-question Center for Epidemiologic Studies Depression (CES-D 10) Scale and 2) the Enhanced Life Distress Index (ELDI), a tool being developed by UNICEF as an alternative way to measure stress in poor, rural populations. Logistic regression models that adjust for individual and household characteristics were used to determine the effect of the cash transfer program on depression and stress. After examining overall programme impacts, we then tested whether levels of social support as reported at baseline moderated impacts on mental health. In this analysis of heterogeneous impacts, treatment impacts were estimated using the social support scale interacted with treatment status and survey round for depression, and interacted with treatment only for stress, since the ELDI was only measured at endline. RESULTS: Preliminary results indicate that the PSSN did not have any positive impacts on mental health 18 months post intervention. Higher social support at baseline is indeed associated with lower levels of depressive symptoms 18 months later but not with lower levels of stress. The analysis suggests that social support does not moderate any program impacts. CONCLUSIONS: Poverty and poor mental health are mutually reinforcing. Constant food insecurity, exposure to violence, and other poor outcomes associated with living in poverty can increase stress and depression. Despite the relationship between poverty and poor mental health, the PSSN which targets poverty, does not appear to reduce depressive feelings in this population. Prior evidence has been mixed. Further, although higher social support is associated with lower rates of depression, as other research has previously shown, social support at baseline does not appear to moderate the effects of the PSSN on depressive symptoms 18 months later. Although social support does not seem to have any relationship with levels of stress, further analysis may be necessary to account for community or household level shocks that can also affect individual stress levels.

Presenting Author: Leah Prencipe

SEXUAL ORIENTATION DISPARITIES IN MATERNAL HEALTH BEHAVIORS Bethany Everett, (University of Utah)

Despite research that has demonstrated that many sexual minority women (SMW) are mothers, and that SMW have an increased risk of experiencing an unintended pregnancy, very little research has examined maternal health among SMW. This gap in research is particularly concerning because of the large body of work that has shown SMW are more likely to report multiple risk behaviors associated with adverse maternal health outcomes (i.e. tobacco and alcohol use, victimization, depression) outside of the context of pregnancy than their heterosexual peers. This study uses data from the National Longitudinal Study of Adolescent to Adult Health (Add Health) to explore sexual orientation disparities in maternal health behaviors, as well as risk and protective factors that influence SMW's maternal health behaviors. At Wave IV of the Add Health data, a total of 13,699 pregnancies were reported by women, of which 3,320 were to SMW. Multivariate models show that SMW are more likely to report alcohol (OR=1.61, 95% CI 1.32, 1.97) and tobacco (OR=1.54, 95% CI 1.39, 1.74) use during pregnancy than their heterosexual peers. These disparities are partially explained by SMW's increase exposure to victimization and discrimination. This research highlights the need to apply the minority stress framework, which suggests that sexual minority health disparities are in large part due to increased exposure to victimization and discrimination to the context of pregnancy. Further, more research is needed to understand how alcohol and tobacco use during pregnancy may impact birth outcomes among SMW.

Presenting Author: Bethany Everett

DISPARITIES IN DIABETES RATES AND QUALITY OF CARE WITHIN IMMIGRANTS IN THE USA Anyun Chatterjee, (George Washington University SPH), Martin Blanco

Immigrants to the USA present an interesting opportunity to test the classical public health question of the impact of place on a health outcome. Diabetes is a prevalent disease in the USA which is slated to rise in rate in the future. Currently, 9.4% of the country is diabetic, and another 28% of the country is prediabetic. We posed the question - is this impact felt disproportionately by immigrants as they live in the US for a decade or more? Our preliminary literature search indicated that this has not been studied extensively, although the impact of American fast food on foreign rates of diabetes has been explored recently. Using the CDC National Health and Nutrition Examination Survey (NHANES) public dataset, we performed preliminary analysis on the association between the variables measuring how long individuals had lived in the USA and whether or not they had ever been told by a doctor that they have diabetes (either type I or II). Our analysis indicated a statistically significant difference between rates of diabetes in immigrants who had lived in America for less than 10 years and more than 10 years after controlling for age, gender, and education. Based on these preliminary results, we will be building a stronger set of tests by controlling for any other potential confounders we discover from a literature search. The endpoint of such a project is to develop a dose-response or similar model connecting time spent in USA to risk of diabetes. We also will use the NHANES variables which measured patient satisfaction, insurance rate, and hospital utilization to assess whether diabetic immigrants are receiving an adequate standard of care compared with the general population. Through these two analysis, we hope to illuminate areas for policy change or programmatic activity which can lead to reductions in diabetes rates and prediabetes rates.

Presenting Author: Anyun Chatterjee

INVESTING IN HEALTHCARE TRANSITION FOR HIV-POSITIVE YOUNG MEN WHO HAVE SEX WITH MEN (YMSM): IMPLICATIONS FOR SUSTAINABLE VIRAL SUPPRESSION OVER THE LIFESPAN Morgan M Philbin, (Columbia University Mailman School of Public Health), Amanda E Tanner, Elizabeth N Kinnard, Brittany D Chambers, Alice Ma, Samuella Ware, Sonia Lee, J. Dennis Fortenberry

Background: Youth (ages 13-24) account for 20% of new HIV diagnoses in the U.S., over 80% of which occur among young men who have sex with men (YMSM). HIV-positive YMSM face significant barriers to care engagement and viral suppression; only 25% are virally suppressed. There are multiple stages throughout the lifespan that can complicate care engagement and viral suppression for YMSM, including healthcare transition (HCT) from pediatric/adolescent to adult care HIV care. Notably, care engagement rates one-year post HCT are under 50%. As viral suppression has both individual- and population-level public health implications (e.g. subsequent transmission rates), we explored factors associated with viral suppression among HCT-eligible YMSM in order to identify potential intervention targets to support YMSM's viral suppression as they move from pediatric/adolescent to adult clinics. Methods: We recruited 97 HIV-positive YMSM across 14 Adolescent Trials Network sites from August 2015 to February 2016. This prospective study collected self-reported ACASI data (i.e., demographics, behaviors) and electronic medical record data from HCT-eligible YMSM at baseline and nine-month follow-up. Youth were designated as HCT-eligible if they were scheduled to transition to adult care within six months of their baseline visit. Viral suppression was defined as having <200 copies/mL. We used Stata-14 to conduct descriptive analyses and multivariate logistic regression to examine factors associated with viral suppression at baseline. Results: The majority of YMSM were 24 years old (78%), not in school (54%), single (74%), and earned <\$12,000/year (67%); almost all identified as a racial/ethnic minority (95%). Many had ever been homeless (41%), incarcerated (42%), or engaged in transactional sex (28%). Nearly three-quarters (71%; 68/97) of the YMSM were virally suppressed at baseline, whereas only 61% (60/97) remained virally suppressed at nine-month follow-up. In bivariate analyses, factors significantly associated with lower odds of viral suppression at baseline included ever being homeless (OR=0.25; 95% CI: 0.10-0.63) or ever being incarcerated (OR=0.33; 95% CI: 0.13-0.82). In the multivariate model, having ever been homeless remained independently associated with lower odds of viral suppression (aOR=0.33; 95% CI: 0.11-0.93). Conclusion: In order to maximize individual-level and population-level health, we must understand the factors associated with YMSM's viral suppression. Although previous studies have found individual- and community-level factors associated with viral suppression (e.g., education, substance use, employment), in this study, only having ever been homeless remained significant. This suggests that the disruptions of homelessness have long-term impacts on HIV-related health outcomes, and that these disruptions could not be fully mitigated by the extensive wrap-around services provided in pediatric/adolescent clinics; structural-level changes must occur to fully address this barrier. In addition, our findings suggest that the high rates of viral suppression appear to erode with HCT (i.e., at nine-month follow up). This highlights the need to identify potential intervention targets to support YMSM during HCT in order to maximize their likelihood of maintaining viral suppression across their lifespan, and thus promote individual- and population-level health and reduce transmission efficiency.

Presenting Author: Morgan M Philbin

IS CHILDHOOD SOCIOECONOMIC STATUS BECOMING A STRONGER PREDICTOR OF ADULT HEALTH? Thomas Fuller-Rowell, (Auburn University), Thomas E. Fuller-Rowell, Jennifer Morozink Boylan, Lydia K. Homandberg, Carol D. Ryff

Objective: Childhood socioeconomic status (SES) is an established predictor of adult health. However, little empirical attention has been given to whether the strength of this association has changed over time. This is surprising given well-documented increases in social inequality in recent decades. The current study examined the magnitude of the association between childhood SES and adult health in two independent national samples of adults in the United States, collected 17 years apart. Methods: Analyses draw on data from the Midlife in the United States study (MIDUS 1; 1995-1996; N = 6,808), and the MIDUS Refresher study (2011-2014, N = 3,483). Both samples have age ranges of 25-74 years, and are nationally representative. Childhood SES was assessed from reports of each parent's highest level of education (mean of mother and father). Adult health was assessed using five measures: self-rated health, body mass index, waist circumference, number of chronic conditions, and functional limitations. Regression models adjusting for age, sex, and race were used to estimate the strength of the association between childhood SES and adult health in each national sample and for each adult health measure. Results: The strength of the association between childhood SES and adult health was found to be stronger in the more recent refresher sample than the original MIDUS cohort for all health outcomes. The magnitude of the difference in the standardized parameter estimates was tested using established methods (Paternoster et al., 1998), and was found to be statistically significant for functional limitations ($\beta = .062, p = .003$), waist circumference ($\beta = .051, p = .017$), and body mass index ($\beta = .043, p = .042$). The differences for chronic conditions ($\beta = .032, p = .106$), and self-rated health ($\beta = .014, p = .475$) were in the expected direction but did not reach statistical significance. Conclusion: Overall, the results of this study suggest a secular trend in magnitude of the association between childhood SES and adult health, such that the situation of one's birth—namely, one's family socioeconomic background—has become a stronger predictor of adult health since the mid 1990's. Further research is needed to examine mechanisms for these effects, and replicate the findings using other data sources.

Presenting Author: Thomas E. Fuller-Rowell

RESIDENTIAL SEGREGATION AND MORTALITY FROM THE LEADING CAUSES OF DEATH, METROPOLITAN COUNTIES, 1999-2016

Ernest Moy, (National Center for Health Statistics), Marcia Gomez, Nancy Breen

Studies in economics and public health have shown that residents living in race-based segregated areas are more likely to experience detrimental effects on health, schooling, employment and other factors that affect quality of life over the life course. This study examines the relationship between race-based residential segregation and mortality rates among Non-Hispanic Blacks and Non-Hispanic Whites at the county level. We combine data on mortality from the National Vital Statistics System with segregation indices based on the 2010 U.S. Census to explore how metropolitan areas with high rates of race-based segregation are associated with all-cause mortality as well as with the leading causes of death among Non-Hispanic Blacks. Study Population: Non-Hispanic Blacks and Non-Hispanic Whites residing in metropolitan counties. We focus on metropolitan counties because residential segregation often involves predominantly black neighborhoods and predominantly white neighborhoods within a metropolitan county. In rural areas, residential segregation may involve predominantly black counties and predominantly white counties; different measures of segregation would be appropriate. We exclude metropolitan counties with fewer than 1000 Black residents in the 2010 U.S. Census. Mortality: Age-adjusted mortality among Non-Hispanic Blacks and Non-Hispanic Whites, 1999-2016. We examine all-cause mortality as well as the top ten leading causes of death among Non-Hispanic Blacks. Residential Segregation: Black Isolation Index for metropolitan counties based on the 2010 U.S. Census. Findings: Age-adjusted all-cause mortality among Non-Hispanic Blacks living in metropolitan counties in the quartile with the highest degree of residential segregation was 1008 per 100,000 population compared with 939 among the middle two quartile counties, and 848 among the lowest quartile counties. As all-cause mortality fell from 1999 to 2016, it tended to fall in parallel across the quartiles of residential segregation. Age-adjusted all-cause mortality among Non-Hispanic Whites mirrored this pattern across counties (802, 776, and 751 in the highest, middle two, and lowest segregation counties) and over time. Among the ten leading causes of death among Non-Hispanic Blacks, six (heart disease, cancer, renal disease, assault, septicemia, and HIV disease) showed this same pattern; Non-Hispanic Black mortality and Non-Hispanic White mortality were highest in the most segregated counties. For four (stroke, diabetes, accidents, and lung disease) there was no observable relationship with residential segregation. Conclusion: Residential segregation as measured by the Black Isolation Index is associated with all-cause mortality as well as mortality from six of the ten leading causes of death among Non-Hispanic Blacks. This effect was observed among both Non-Hispanic Black and Non-Hispanic White residents and persisted from 1999 to 2016. More research is needed to understand the relationship between residential segregation and health after adjustment for other community characteristics and why some causes of death seem related to segregation but not others.

Presenting Author: Ernest Moy**INTEGRATING SOCIAL SERVICES INTO HEALTH CARE SETTINGS: MAKING THE CASE FOR SUSTAINABLE FINANCING**

Elisa M. Fisher, (The New York Academy of Medicine), José A. Pagán

Addressing the social determinants of health is vital to improving individual and population health and advancing health equity. Research indicates that integrating health and social services is both necessary and cost-effective. This is especially true for the growing number of older adults who face increasing risk of multiple chronic health conditions, cognitive decline, and disability. The Community Care Connections (CCC) program, developed by Lifespan of Greater Rochester, integrates care navigators (experts in a broad array of social services, ranging from nutrition to housing to transportation) and health care coordinators into the workflow and referral systems in health care delivery settings, ranging from primary care offices to emergency departments. These coordinators connect patients to community resources, guide them across healthcare settings, and serve as their patient care advocates. Using data on health care utilization from the Rochester Regional Health Information Organization, we conducted a pre-post analysis of changes in rates of inpatient hospitalizations and emergency room department visits 3 months before and 3 months after CCC program participation. Preliminary findings suggest that the integration of services and fostering of inter-organizational partnerships leads to reductions in both outcomes of interest (inpatient hospitalizations and emergency department visits) as well as reduced health care costs. To estimate return-on-investment of the CCC program, we calculated the average cost of an inpatient hospitalization or ED visit for adults aged 65 years or older with Medicaid or Medicare insurance, using 2014 data from the Medical Expenditure Panel Survey, adjusted to December 2016 using the Consumer Price Index for medical care (U.S. city average, all urban consumers). Analyses suggest an average return on investment (ROI) of \$4.02 for every dollar invested in the program. However, to facilitate conversations around program financing and sustainability, we also estimated ROI for subsets of program participants, based on health insurance coverage or payer. ROI findings to-date range from \$3.27 per dollar invested to \$7.56 per dollar invested, depending on the sample of participants. These findings have sparked interest among payers in embedding the program into their covered benefits, suggesting a potential path to sustainable financing for integrated health care and social services. Future research will add a comparison group and lengthen follow-up periods to increase the rigor of evaluation findings and ROI calculations.

Presenting Author: Elisa Fisher

EXAMINING RACE DISPARITIES IN OBESITY WITHIN THE MIDDLE CLASS Caryn N Bell, (University of Maryland, College Park)

Introduction: Half of African Americans are obese and fewer than one in four are at a healthy weight. Race disparities are not ameliorated by race differences in socioeconomic status (SES), and disparities increase in magnitude as SES increases. Racial differences in associations between SES and obesity by race and gender further demonstrate the complex interrelationships between race, class and health. Examination of racial disparities within class categories can elucidate these associations, particularly in the middle class. However, SES indicators that represent middle class status may vary by race. Aim: This study examines how race and middle class indicators interact on obesity within class groups among men and women. Methods: Using data from the 2007-2014 National Health and Nutrition Examination Survey, obesity was measured as ≥ 30 kg/m² and those with incomes 200-400% of the federal poverty line (FPL) were considered middle class. Additional middle class indicators included college education, homeownership, self-employment, and income from investments and dividends. Race and middle class status indicators interacted on obesity. Race disparities in obesity were smaller in the middle class compared to the upper class (>400% FPL) among men and women. After accounting for additional potential middle class indicators, racial differences were eliminated among those with incomes between 200-400% FPL and greatly attenuated among the upper class. No middle class indicators were associated with obesity among African American women, and only education and homeownership were among African American men. However, interest from investments was associated with lower odds of obesity among white men and women, as was income. Discussion: Findings from this study suggest that SES matters more to obesity rates among whites, particularly in the upper class. African Americans who are considered upper class by household income may not experience the same health benefits due to non-SES factors. These factors may be experienced across the SES spectrum among African Americans, or the experiences of upper class African Americans could be unique. Future studies should examine these relationships specifically for obesity given the nuanced associations between race, sex and class.

Presenting Author: Caryn N Bell

INTEGRATING DATASETS AND DISCIPLINES: OPPORTUNITIES AND CHALLENGES IN ESTIMATING ACCURATE AND POPULATION-RELEVANT, RACIAL/ETHNIC-SPECIFIC HYSTERECTOMY RATES Danielle R. Gartner, (University of North Carolina at Chapel Hill), Robert A. Hummer, Paul Delamater, Jennifer L. Lund, Brian W. Pence, Whitney R. Robinson

Background: Hysterectomy (uterus removal) is the second most common surgical procedure among women under 65 years old in the United States. Racial and ethnic differences in incidence have been documented, though there is a dearth of information regarding incidence in Non-Hispanic (nH) Asian, nH American Indian (nH AI), and Hispanic populations. Administrative health datasets can provide a count of the universe of surgeries conducted; however, their applicability as a tool to monitor health equity requires combining these counts with other datasets, each of which brings its own set of limitations. Purpose: Our objectives are to 1) calculate population-relevant, racial/ethnic-specific rates of hysterectomy incidence in a state with historically high rates and 2) discuss the opportunities and challenges associated with doing population-level, health services-based racial disparities research. Methods: To estimate numerators for racial/ethnic-specific incidence rates, we used billing-derived surveillance data from the 2014 North Carolina (NC) Hospital Discharge and NC Ambulatory Surgery Visit databases. These data capture the all hysterectomies performed in NC among reproductive-aged women (17<age<45 years). Women were excluded if residing in other states (n=780), categorized as "other" race (n=112), or missing race/ethnicity (n=100), leaving an analytic sample of 7,389. Denominators (person years) for the rates were derived from 2014 age-, race-, and sex-specific NC population data from the American Community Survey. Failure to exclude women with previous hysterectomy from rate denominators may underestimate surgery rates. Estimates of racial/ethnic differences may be particularly biased due to differential prevalence of hysterectomy by race/ethnicity. To address this concern, we applied NC racial/ethnic-specific hysterectomy prevalence estimates from the 2014 Behavioral Risk Factor Surveillance System to remove the proportion of women expected to have had a previous hysterectomy from denominators. Finally, rates were age- and sex-adjusted to the 2000 US Decennial Census. Results: Age-adjusted rates were highest among non-Hispanic American Indian (nH AI) women at 64.5 per 10,000 person-years (PY) and lowest among non-Hispanic Asian women at 6.9 per 10,000 PY. The greatest absolute change attributable to denominator correction was among nH AI women (corrected: 67.6 per 10,000 PY vs. uncorrected: 64.5 per 10,000 PY), followed by non-Hispanic Black women (corrected: 59.1 per 10,000 PY vs. uncorrected 56.4 per 10,000 PY). The denominator-corrected non-Hispanic White rate was 46.4 per 10,000 PY (vs. uncorrected: 44.4 per 10,000 PY). All racial/ethnic rate differences (ref: nH White) increased after correction. Conclusion: Integrating data from administrative surgery databases, the Census, and nationally representative health surveys allows researchers to generate estimates that monitor women's health equity and set targets to redress potential inequities. However, there are several data quality challenges that complicate the combining of these data. In particular, potential non-concordance between racial/ethnic categories and small population sizes for nH AI and nH Asian women limit researchers' ability to match numerators and denominators by race/ethnicity and estimate statistically precise rates. These results highlight how integrating existing data can allow researchers to estimate population-relevant, racial/ethnic differences in health care utilization, but also demonstrate that care is needed to understand the limitations of these existing data sources.

Presenting Author: Danielle R. Gartner

STRUCTURAL SEXISM AND DEPRESSION IN THE UNITED STATES Patricia Homan, (Duke University, Sociology)

The present study seeks to build a new line of health inequality research that parallels the emerging structural racism literature by developing theory and measurement for the concept of structural sexism and examining its relationship to depressive symptoms among U.S. women and men at midlife. Consistent with contemporary theories of gender as a multilevel social system, I conceptualize and measure structural sexism as systematic gender inequality in power and resources at the macro-level (U.S. state), meso-level (marital dyad), and micro-level (individual). I use U.S. state-level administrative data linked to geo-coded data from the NLSY79, as well as measures of interspousal inequality and individual views on women's roles as predictors of depressive symptoms in fixed and random effects models for women and men. Results show that exposure to macro-level structural sexism is associated with increased depressive symptoms among both women and men, supporting theories of universally harmful social inequality. However, exposure to more sexism at the meso-level is unrelated to depressive symptoms among women and is associated with fewer depressive symptoms among men. This pattern supports gender conflict perspectives in which men reap health benefits from greater dominance or status relative to their wives. At the micro-level, internalized sexism is associated with more depressive symptoms among women and is unrelated to depressive symptoms among men. Finally, an absence of substantial mediation or moderation in combined models containing macro-, meso-, and micro-level sexism suggests that exposures at each level are operating largely independently to affect mental health. The results of this study highlight the need for future research on gender inequality and population health using a structural sexism perspective.

Presenting Author: Patricia Homan

A CAUSE OF GREAT PAIN: THE RELATIONSHIP BETWEEN VIOLENCE AGAINST WOMEN AND UNPRESCRIBED PRESCRIPTION PAIN MEDICATION USE Misty Harris, (West Virginia University), Jeralynn Cossman, Walter DeKeseredy

Research has established a clear association between violence against women, chronic pain, and women's use of prescription pain medication, both prescribed and unprescribed. Women who have experienced interpersonal violence or who have left an abusive partner report higher levels of pain. Moreover, studies have found that women are more likely to take unprescribed opioids, especially to treat depression and anxiety, while some of the highest rates of opioid prescription is found among women of reproductive age. Further, between 1999 and 2010 overdoses from prescription pain medication increased by 400% for women, compared to 265% for men. A recent meta-analysis of 57 articles investigating the use of pain medication by women between 1995 and 2014 found that many of the same populations of women at risk of unprescribed pain medication use are also those at risk of interpersonal violence, including sexual minorities and transwomen, indigenous women, and adolescent/young and older women. Pain medication use, and violence are both also known to disproportionately affect women living in rural locations. Most of the research available about women's use of unprescribed prescription pain medication, however, is cross-sectional and descriptive, limiting what can be known about the associations. The current study uses data from all four waves of The National Longitudinal Study of Adolescent to Adult Health (Add Health) to further investigate the association between women's experiences with violence over time and the odds of using nonprescribed prescription pain medication in early adulthood. During the first wave of Add Health participants were between the ages of ten and nineteen years old, and by wave four ranged in age from twenty-four to thirty-three. The analysis includes the unprescribed use of prescription medications in adulthood and the aggregated experiences of violence across waves. We also include general pain, depression, anxiety, illicit and unprescribed prescription drug use, and alcohol use across waves. Violence against women and the disproportionate use of unprescribed prescription pain medication among women are tightly interwoven social phenomena related to oppression and inequality. The responses to both reaches across law and medicine, bridging criminology, public health, and medicine in ways that will require interdisciplinary work to move forward. This study has important implications for research, practice, and policy. First, ignoring the connections explored here simultaneously silences a potentially important consequence of violence against women and a similarly significant predictor of prescription pain medication misuse among women. Second, policy and practice concerned with the treatment of pain medication addiction and the prevention of overdose deaths would be well-served by a better understanding of one potential underlying cause of pain medication use among women – a population disproportionately affected by prescription pain medication.

Presenting Author: Misty Harris

UPSTREAM INFLUENCES ON HEALTH AND HEALTH INEQUITY IN A MID-SIZE RURAL COMMUNITY: BEYOND “DEATHS OF DESPAIR”

Nicole L. Novak, (University of Iowa), Edith Parker, Barbara Baquero, Brandi Janssen

Rural health disparities are well documented and rural disparities in the “heartland” have garnered attention in light of increasing premature mortality among rural Americans (1,2). However, influences on health may vary according to degree of rurality. “Micropolitan” statistical areas, nonmetropolitan geographic areas centered around a population core of 10,000 to 50,000 people, were first designated in 2003. Early research on micropolitan areas nationwide indicated that these areas occupied a middle ground between metropolitan and rural (“non-core-based”) areas in terms of socioeconomic characteristics of the population such as educational attainment, occupation, and income (3). However, micropolitan areas may no longer occupy a midpoint between metropolitan and non-core based areas. Reports using 2015 data from Iowa’s 17 micropolitan areas found that micropolitan areas were doing more poorly than either non-core or metropolitan areas in terms of median household income, poverty rates, labor force participation, and unemployment (4). Nearly all micropolitan communities, which have been dependent on agricultural processing or durable-goods manufacturing, have also suffered more population losses than other communities (5). These reports are of concern for public and population health: economic indicators like poverty rates and unemployment, which are on the rise in micropolitan communities, are closely linked to population health, especially mental health and health behaviors (6,7). Another trend in micropolitan communities is increasing racial, ethnic, and immigration diversity as midsize communities become “new destinations” for immigrants from Latin America and throughout the world, and internal migrants of color from other areas of the country (8,9). The intersection of micropolitan residence, race/ethnicity, and nativity is under-theorized in a moment when many studies focus on rural Whites. To better understand the lived experience of the micropolitan context, 50 qualitative in-depth interviews were conducted with Latino and non-Latino adult residents of a midsize rural community (population 24,000) in Southeast Iowa. The community in question has high rates of poverty and substantially higher risk of premature death, obesity, and physical inactivity than the rest of the state, ranking 97 out of 99 counties (10). Residents’ narratives highlighted the particular ways their community context influenced their well-being and behavior. A key theme was the influence of the town’s two primary employers, a meat processing plant, and an agricultural equipment manufacturer, on the well-being and economic prospects of local residents, even those not employed in the plant themselves. Residents also articulated complex attitudes toward the town itself, with frustration or even disgust coexisting with loyalty and pride. Residents of color described unique challenges in navigating community and institutional spaces that regularly construct all immigrants and people of color as outsiders. Residents articulated a range of responses to the challenges they encountered, from resignation to effortful striving to overcome structural barriers to their goals. Some residents described the mental and emotional load of continually readjusting their attitude towards the context, a high-effort process with implications for health and well being. The paper will contribute to the formation of a conceptual model that locates micropolitan experiences within a structural framework, and contributes to future research on the intersections of rural residence, race/ethnicity, immigration and health.

Presenting Author: Nicole L Novak**POPULATION HEALTH OUTSIDE THE BOUNDARIES OF THE STATE: RECONSTRUCTING THE DYNAMICS OF POST-STATE MORTALITY IN THE CAUCASUS** Tassie Katherine Hirschfeld, (Department of Anthropology University of Oklahoma), Dr. Kirsten de Beurs

Political instability and armed conflict have long been recognized as key contributors to population health declines and mortality crises. These problems were especially acute in the 1990s, when the collapse of the Soviet Union led to conflicts between ethnonationalist militias, organized crime groups and other non-state actors in a number of post-Soviet spaces, including the mountainous regions of the Caucasus. Resurgent epidemics of malaria and other preventable diseases occurred during this time, but the relationship between political collapse, conflict, and health decline is not well theorized in public health scholarship. This research project combines geospatial analysis with qualitative historical research to analyze the parallel emergence of conflict and vector borne diseases in the Caucasus. A key goal of the project is to use these methods to estimate the effect of these events on overall mortality patterns between 1988-1998. Malaria is a leading cause of adult and child mortality worldwide, and was successfully eradicated throughout the Caucasus region for most of the Soviet era. The resurgence of *P. vivax* malaria between 1989-1999 indicates that environmental conditions changed dramatically over a short period of time. But it has been difficult to determine exactly what took place, due to the chaotic nature of the post-state environment. In the period following the Soviet collapse, there were temporal and spatial interruptions in epidemiological surveillance and vector control programs due to the fact that there were no stable governments in place to coordinate these activities. Lapses in administrative record keeping, including registries of births and deaths, also made it difficult to estimate the extent of population health declines. This project develops an innovative set of indirect methods to assess the impact of conflict, state failure and vector borne disease on population health trends in the post-Soviet period. Retrospective analysis of geospatial data from several countries in the Caucasus is combined with review of archival documents to construct a spatial and temporal history of conflict, environmental change and vector borne disease. Formal analysis of these data will begin in May 2018 and continue through 2021. Preliminary research suggests that conflicts in the Caucasus were financed in part by illicit resource extraction, and that these practices (combined with changes in agriculture) altered the landscape in ways that facilitated niche expansion for *Anopheles* mosquitos. To evaluate this thesis, we will create a series of vector suitability maps by fall 2018. These geospatial analyses will be contextualized with qualitative historical data detailing the early history and financing of post-Soviet insurgencies. The result will be a retrospective environmental and epidemiological study of health trends during a period of extreme instability. This work is important because it extends population health research beyond political boundaries to address the vulnerabilities of groups in conflict zones or other stateless spaces.

Presenting Author: Dr. Tassie Katherine Hirschfeld

DATA MANAGEMENT, DISSEMINATION & LINKAGE IN ADD HEALTH Sarah Dean, (University of North Carolina, Chapel Hill)

The National Longitudinal Study of Adolescent to Adult Health (Add Health) is a longitudinal study of a nationally representative sample of adolescents in grades 7-12 in the United States during the 1994-1995 school year. The Add Health cohort has been followed into young adulthood with four in-home interviews from 1995-2009 and are currently completing web/paper surveys and in-home visits through 2018 for the fifth wave of data collection. Wave V data collection focuses on collection of social and biological data on the respondents at ages 31-42. This poster provides an overview of our data dissemination strategies, a four tiered system set to minimize deductive disclosure risk for respondents. The poster also presents the study's research aims, details on the longitudinal design and a summary of Wave V data collection currently underway. We will discuss the most popular research areas, major findings, and explore opportunities for new data users. Information will be provided on accessing public use data, accessing restricted use data, including the new online restricted use data application available on CPC's Data Portal, as well as information on accessing GWAS data via the NIH database of Genotypes and Phenotypes (dbGaP).

Presenting Author: Sarah Catherine Dean

THE EPIDEMIOLOGY OF A MOVEMENT: ADDRESSING THE FUNDAMENTAL CAUSES OF HIV/AIDS Terrell Frazier, (Columbia University),
Terrell Frazier

In contrast to the prevalent risk-factor epidemiology, recent work has challenged the fields of epidemiology and medical sociology, to take seriously the “fundamental causes” of disease. Despite increasing attention to the social determinants of health and health inequities, there has been limited research into the most effective practices by which individuals or communities might address such fundamental causes of disease. To examine this gap, newly emerging research compares the efforts of two social movement organizations and explores “fundamental causes” of HIV/AIDS in New York City at different historical moments—ACT UP/NY, which peaked in the early 1990s, and VOCAL-NY, which currently remains active. Through the examination of the strategic practices of activists within these organizations, what emerges are challenges to the dichotomy between what is “fundamental” and “proximate” causes of disease, and also between interventions concerning both structural power and medical knowledge. This talk will explore this dichotomy, leveraging transcripts of interviews from more than one hundred and eighty ACT UP.

Presenting Author: Terrell Frazier

NEIGHBORHOOD ECONOMIC HISTORICAL CHANGE AND RACIAL DISPARITIES IN BIRTH OUTCOMES: A CASE STUDY OF TEXAS

Catherine Cubbin, (University of Texas at Austin), Yeonwoo Kim, Shetal Vohra-Gupta

Background: Black women in the U.S. experience substantially higher rates of adverse birth outcomes compared with White women. Researchers have begun to examine whether broader social factors, including neighborhood context, may influence these outcomes. However, very few studies have attempted to measure exposure to neighborhood economic histories—beyond a point-in-time measure—and link them with these outcomes. The objective of the study was to determine whether neighborhood economic histories (measured using 30 years of data) contribute to birth outcomes—and the Black/White disparities in these outcomes.

Methods: Natality files include data derived from birth certificates for all singleton live births in Texas from 2009-2011. The dependent variables were pre-term birth, low birth weight, and small for gestational age. The independent variables, derived from the Neighborhood Change Database from 1990-2010 were neighborhood poverty history (long-term low, moderate, high, increase, and decrease) and neighborhood income inequality history (long-term low, moderate, high, increase, and decrease). Hierarchical generalized linear models were used to examine the associations between neighborhood economic histories (Level 2) and adverse birth outcomes (Level 1). Results: The prevalence of adverse birth outcomes was 10% for preterm birth, 7% for low birth weight, and 11% for small for gestational age. In adjusted models, living in neighborhoods with long-term high poverty had the highest odds of pre-term birth, low birth weight, and small for gestational age (ORs=1.17, 1.22, 1.19, respectively). Living in neighborhoods characterized by long-term moderate poverty, increasing poverty, and decreasing poverty also had higher odds of adverse birth outcomes (ORs=1.07-1.10; 1.11-1.13; 1.09-1.11, respectively) compared to living in neighborhoods with long-term low poverty. Living in neighborhoods with long-term high income inequality had higher odds of these outcomes (ORs=1.07, 1.07, 1.08, respectively) compared to living in neighborhoods with long-term low inequality. Neighborhood economic histories, however, did not reduce the odds of being black (vs. white). Conclusion: Neighborhood economic histories are important risk factors for adverse birth outcomes.

Presenting Author: Catherine Cubbin**LONGITUDINAL NEIGHBORHOOD POVERTY TRAJECTORIES AND RACIAL/ETHNIC COMPOSITIONS IN TEXAS** Richa Gupta, (University of Texas Austin), Richa Gupta, MPH, Lisa S. Panish, MSW, Yeonwoo Kim, PhD, Catherine Cubbin, PhD

Background Notable relationships exist between poverty and health. These relationships are further attenuated by neighborhood factors, such as the socioeconomic context and racial composition of one's neighborhood. Standard approaches to research exploring associations between neighborhood factors and health have been critiqued for a reliance on cross-sectional designs, which fail to provide a historical perspective on this multifaceted relationship. The use of longitudinal data to examine racial composition and socioeconomic trajectories of neighborhoods over time can provide crucial insights into the complex interplay between these neighborhood characteristics and ultimately offer historical context for the broader relationship between neighborhood factors and health. Methods Using economic and racial composition data for Texas census tracts from the Neighborhood Change Database, we categorized longitudinal poverty trajectories and racial/ethnic trajectories for all Texas neighborhoods (i.e., census tracts). Longitudinal trajectories spanned a 30-year period (1990-2010) and were categorized as follows for both poverty and racial/ethnic composition: 1) long-term low, 2) long-term moderate, 3) long-term high, 4) increasing, or 5) decreasing. We estimated descriptive relationships and unadjusted associations between longitudinal poverty trajectories and racial/ethnic trajectories. Results Overall, nearly a quarter (24.8%) of Texas neighborhoods experienced long-term high poverty and 9.9% experienced long-term low poverty from 1990 to 2010. Of the long-term of long-term high poverty neighborhoods, 37.0% were long-term high non-Hispanic Black, 62.6% were long-term high Latinx, and 2.7% were long-term high non-Hispanic White. In the long-term low neighborhoods we observed the inverse: 4.5% were long-term high non-Hispanic Black, 1.2% were long-term high Latinx, and 62.0% were long-term high non-Hispanic White. Compared to neighborhoods with long-term low non-Hispanic Black trajectories, those with long-term high non-Hispanic Black trajectories had 1.54 times the odds of being long-term high poverty neighborhoods compared to long-term low poverty (95% confidence interval [CI]= 1.20, 1.97). Long-term high Latinx neighborhoods (compared to long-term low) had 7.23 times the odds of experiencing increasing poverty compared to long-term low poverty (95% CI= 5.49, 9.52). Conclusion Understanding the historical context of neighborhoods in relation to socioeconomic and cultural factors can lead to novel insights in public health research. Future studies should examine relationships between these longitudinal variables and specific health conditions.

Presenting Author: Richa Gupta

COHORT CHANGES IN THE U.S. EDUCATION-MORTALITY ASSOCIATION: VARIATION BY GENDER AND RACE/ETHNICITY Ryan Masters, (University of Colorado Boulder), Jason Boardman, Fernando Riosmena

Accurately estimating trends in the education-mortality association requires one to account for lagged selection bias. Equally important to consider is the degree to which the association and trends therein vary by race, ethnicity, and gender. We analyze trends in the U.S. education-mortality relationship while (1) paying special attention to the criteria necessary for properly identifying trends in mortality and (2) investigating the intersection of gender, race/ethnicity, and educational status on mortality risk in the United States. We estimate cohort-specific gradients in the education-mortality association in the National Health Interview Survey, 1986-2009, Linked Mortality Files through 2011. We measure educational attainment using conventional measures of credentials as well as one's relative standing among cohort peers. Results indicate (1) that the education-mortality gradient has grown substantially stronger across birth cohorts, (2) that the trends are robust to adjustments for lagged selection bias, and (3) that the education-mortality gradient and cohort-based trends in the gradient vary considerably by race/ethnicity and gender.

Presenting Author: Ryan Masters

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