

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 slighter 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, respectfully. 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.

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