# Appendix 3-B.
## ABSTRACTS OF PROJECTS STARTED IN 2015: AGENCY FOR HEALTHCARE RESEARCH AND QUALITY (AHRQ) DATA OR NATIONAL CENTER FOR HEALTH STATISTICS (NCHS) DATA

Projects in this portion of the appendix use data provided by the Agency for Healthcare Research and Quality (AHRQ) or data provided by the National Center for Health Statistics (NCHS). Under authority of the Economy Act, the Center for Economic Studies hosts projects in Research Data Centers using data provided by AHRQ or NCHS. AHRQ or NCHS is solely responsible for selecting projects and for conducting disclosure avoidance review.

## THE EFFECT OF REGULATING MEALS AND GIFTS TO PRESCRIBERS (AHRQ)

*Josef Tracy – Georgia State University*

From 2009 to 2012, Massachusetts banned pharmaceutical representatives from providing meals to doctors. This project investigates what effect the ban had on physician prescription patterns. Using the Medical Expenditure Panel Survey (MEPS), the research compares Massachusetts to other states to examine whether or not the policy decelerated pharmaceutical spending in general, as well as for specific medications. Interest centers on the effect on medications that are still on-patent but are "copycats" of medications that have gone off-patent and have generic versions. Given that these copycat medications were likely the focus of aggressive marketing prior to this policy change, the research will test whether the policy causes substitution toward the generics. The project also examines the extent to which changes in practice patterns and prescription spending levels impact health outcomes. The project employs a difference-in-differences identification strategy. The composition of the control group hinges upon whether or not pretreatment trends in Massachusetts match those in the control states. If the pretreatment trends match, then the control group will consist of individuals from other states clustered by their family identifier. If not, then the Synthetic Control Method (SCM) will be used to create a "synthetic" comparison state.

## HEALTH CARE REFORM AND LABOR MARKETS: STATE BY STATE ANALYSES (AHRQ)

*Naoki Aizawa – University of Minnesota*

This project develops equilibrium labor market models with health and health insurance, and uses counterfactual simulations to study how health care reform will affect the health insurance and labor markets. In particular, the research evaluates how those impacts differ by states, given that some of the most important components of health insurance reforms such as the Affordable Care Act are explicitly state based: Medicaid expansion is determined by the state's own decision, and roughly a half of states' expanded health insurance exchanges are private insurance markets, so that the market is defined in each state. Most existing studies evaluating health care reform assume that labor or health insurance markets are single-national labor markets, which are unsuitable to evaluate the state based policies. This project uses the Medical Expenditure Survey-Household Component (MEPS-HC) with state and county FIPS codes to estimate state based models of health, health insurance, and labor market equilibrium. The models will be used to evaluate demand for health insurance and uninsured rate as well as labor market impacts (changes in full time workers and part time workers, and in labor productivity).

## COMPARING DIET QUALITY, PHYSICAL ACTIVITY, AND SEDENTARY BEHAVIOR IN YOUTH WITH AND WITHOUT ADHD (NCHS)

*Carol Curtin – University of Massachusetts Medical School*

Over the past decade, growing evidence associates attention deficit/hyperactivity disorder (ADHD) with obesity in both children and adults. However, little research has focused on the dietary and physical activity factors that may underlie weight status in this population. Moreover, irrespective of the association with weight status, these factors have important implications for health overall.

This project utilizes data collected in NHANES 2001–2004 to compare dietary and physical activity behaviors between youth with and without ADHD ages 8 to 15 years. The advantage of NHANES is that the data are nationally representative. Unlike most surveys that include children with ADHD, NHANES data are available on anthropometric, dietary, and activity measures. Additionally, in the

2001–2004 waves of NHANES, ADHD and other behavioral health conditions were assessed using a gold standard diagnostic methodology, an advantage over other datasets that typically use a single question to query the presence of these conditions. This project will contribute to the literature by describing dietary and physical activity behaviors in a significant proportion of the nation's youth.

## IMMIGRATION POLICY ENVIRONMENT AND HEALTH OF MEXICAN IMMIGRANT FAMILIES IN THE U.S. (NCHS)

*Neeraj Kaushal – Columbia University*
*Julia Wang – Columbia University*

This project studies the effects of state policies that help the integration of immigrants as well as state and local policies that increase their risk of deportation on the health behaviors, health, and mental health outcomes of Mexican immigrant families in the United States. The effects of two policies that have influenced the lives of low-income immigrant families form the focus: (1) State-Dream Acts that allow undocumented students to obtain subsidized college education in 15 states across the

country, and (2) local and state level immigration enforcement that has escalated fear and risk of deportation among the undocumented. The research design is based on the natural experiments that come with state and local variations of the two policies. Empirical analyses will use the National Health Interview Survey from 1997–2012. No scientific research exists on how immigration policy environment affects immigrant health, in general, and how state- and local-activism on immigration

enforcement and State Dream Act, in particular, have influenced the health behaviors, health, and mental health of immigrant families. Given the far-reaching impacts of these policies on the undocumented and their families, their health consequences are likely to be high. Any discussion that ignores these effects is unlikely to account for the full range of costs and benefits of these policies. This research attempts to bridge this critical knowledge gap.

## COMPLEX FAMILIES, STATE FAMILY POLICY, AND CHILD HEALTH DISPARITIES (NCHS)

*Justin Denney – Rice University*
*Rachel Kimbro – Rice University*
*Christine Percheski – Northwestern University*
*Maria Perez-Patron – Texas A&M University*

For the last two decades, researchers have documented health and wellbeing differences for children in families with married and unmarried parents, even after accounting for factors such as socioeconomic status. The dichotomy of "married vs. unmarried," however, is far too simplistic for today's complex families. This project will utilize the restricted National Survey of Children's Health (NSCH) 2011–2012 wave to assess child health disparities by detailed family structure categories including those for married and cohabiting step families, single parent families, and extended kin families. With the detailed child health assessments available in the data, the researchers will be able to document a wide variety of these health disparities among children of all ages and carefully account for a variety of mechanisms, which might link family structure to child health. The project links the data to state measures of family and welfare policy, which might also be associated both with family structure and with child health outcomes. The restricted NSCH data contain the detailed family structure and household roster variables needed to construct needed family structure measures. The public version of the data includes the state identifiers required for merging in the state family and welfare policy variables.

## EFFECTS OF STATE PRESCRIPTION DRUG MONITORING PROGRAMS ON OPIOID PRESCRIBING: EVIDENCE FROM THE NATIONAL AMBULATORY MEDICAL CARE SURVEY (NCHS)

*Yuhua Bao – Cornell University*
*Yijun Pan – Cornell University*

Misuse and abuse of prescription opioids is a rapidly growing and deadly epidemic in the United States. State Prescription Drug Monitoring Programs (PDMPs) are a prominent tool in monitoring and curtailing this epidemic. One important pathway through which PDMPs operate is to change the prescribing behaviors of physicians. They do so by assisting physicians in identifying patients at high risk of abusing or diverting opioids and by deterring aberrant prescribing behaviors. This study aims to evaluate the effect of State Prescription Drug Monitoring Programs on physician prescribing of opioids in ambulatory settings. It makes use of data from the 2001–2011 National Ambulatory Medical Care Surveys (NAMCSs) to identify patient visits to physician offices for pain-related reasons. It links information on state PDMP implementation dates and measures of PDMP program strength with the multi-year NAMCS data (based on State ID in the restricted NAMCS data). The outcome variable is the dichotomous variable of opioid prescribing at a pain-related visit and the key variable of interest is the policy variable if a state had implemented PDMP by the time of the office visit. It estimates the effect of the state PDMPs on physician prescribing of opioids using logistic regression, controlling for patient and physician characteristics, clinical diagnoses, and state and time fixed effects. This study also examines whether the effect of state PDMP implementation on physician prescribing of opioid varied by the location of a county. Counties located in different parts of a state might see different effects of state PDMP implementation because of the possible cross-state "doctor shopping" behavior. The cross-state "doctor shopping" behavior might happen if there existed a difference in the PDMP implementation among adjacent states. Counties adjacent to other states might have more cross-state "doctor shoppers" than inland counties.

## MEDICAID EXPANSIONS AND INTERGENERATIONAL TRANSMISSION OF ASTHMA (NCHS)

*Owen Thompson-Ferguson – University of Wisconsin–Milwaukee*

Using data from the 1998–2012 waves of the National Health Interview Survey (NHIS), the researcher has assembled a data set containing information on a variety of asthma outcomes in a sample of approximately 120,000 parent-child pairs, and found that there are very strong intergenerational associations in asthma. Using state level geocodes, this project assesses the impact of children's access to public medical care on asthma transmission by exploiting differences in the generosity of public health insurance programs for children, primarily Medicaid and CHIP, across states and over time. These programs expanded rapidly during the study period, but did so with a great deal of state-level heterogeneity, producing an unusually rich natural experiment that has not been used heretofore to study intergenerational health linkages.

## EXTENT OF PCMH ADOPTION AND MEDICATION USE QUALITY (NCHS)

*Karen Farris – University of Michigan*
*Chi-Mei Liu – University of Michigan*

One in five prescriptions in primary care is inappropriate and adverse drug events are common. Medication prescribing and use can be improved, and quality indicators have been developed to examine and ameliorate the problems. The Patient Centered Medical Home (PCMH) is an important model of primary care, emphasizing continuous coordinated patient care. A 2012 review article showed that PCMH provides consistent positive results in improving patient quality of care measures like receipt of HbA1c or preventive care, but mixed results were shown among outcomes of care. What is not known is the extent to which medication-related measures may be impacted and the extent to which adverse drug events may be prevented by practices with varying levels of PCMH adoption. This study aims to (1) quantify the level of adoption of PCMH and identify the factors that affect the extent to which primary care practices have adopted PCMH principles, and (2) understand the impact of this model on processes and outcomes of care related to medication quality indicators. The research uses the National Committee for Quality Assurance (NCQA) accreditation standards to define the level of PMCH implementation and quality indicators from HEDIS and PQA to quantify medication use quality. The 2009–2010 NAMCS will be used. The first analysis will use multinomial logistic regression, with the dependent variable as the level of PCMH recognition. In the second analysis, level of PCMH will be employed to predict medication-related quality indicators developed using HEDIS and PQA approaches to quantify medication use quality. This exploration is important because the results will provide insightful information for future health policy researchers in identifying factors that affect the percentage of practices transforming from traditional practice to the reformed ones and the subsequent impact on medication use quality.

## INTERRACIAL CONTACT AND HEALTH BEHAVIORS (NCHS)

*Jenifer Bratter – Rice University*
*Mary Campbell – Texas A&M University*
*Jarron Saint Onge – University of Kansas*

The growth of interracial contact in the United States has the potential to create major shifts in our understanding of racial health disparities in the United States. This research calls for the creation of a multi-level database, with data on individuals' socio-demographic background, psychological well-being and health behaviors, the race and Hispanic origin of respondents and co-residents (i.e. spouses/partners), and information on neighborhood characteristics. It first identifies the specific racial backgrounds of self-identified multiracial respondents among all respondents in the person and sample adult file in the National Health Interview Survey (NHIS) by employing full (un-imputed) racial/ethnic information from the NHIS ethnicity and race questions for the years 2001 to 2011. Second, it explores multiracial neighborhood and family contexts and parses the influence of these contexts on health behaviors and health status, controlling for social and economic composition. Information on neighborhood context requires a merge of tract level geographic information from the decennial Census, merging the variables of racial and social class composition (e.g., counts of major racial/ethnic groups in the tract, percent of the tract in poverty, and percent of the tract unemployed) with the restricted Census tract identifiers from the NHIS. This project has the potential to expand our understanding of racial health disparities and how they are changing in an era of growing interracial contact. It should challenge our thinking about the way that individuals experience racial difference when their experiences are not in homogenous family and neighborhood contexts.

## ACCOUNTABLE CARE ORGANIZATION AND NON-ACCOUNTABLE CARE ORGANIZATION ACCEPTANCE OF MEDICAID PATIENTS (NCHS)

*Sonali Saluja – Cambridge Health Alliance, Harvard Medical School*

Little is known about the nature of ambulatory medical practices that are joining Accountable Care Organizations (ACOs). This research aims to determine if an association exists between the percentage of Medicaid patients in a medical practice and that practice's ACO status. That is, it examines whether medical practices that participate in an ACO are less likely to care for patients with Medicaid. A secondary goal is to characterize the nature of ACO practices and the resources that are available to them compared to non-ACO practices. The project uses the 2012 National Ambulatory Medical Care Survey (NAMCS)–National Physician Workflow Supplement for EHR adopters and for non-adopters to identify a sample of ACO and non-ACO practices. Use of the 2011 NAMCS–Electronic Medical Record Survey will permit a determination of the percentage of Medicaid or CHIP patients in practices and the payer mix of these practices. Also included is other information about the practices' size, scope, and available resources. Logistic regression is employed to determine if there is a relationship between ACO status and percent of Medicaid/CHIP patients. Additionally, there will be a descriptive analysis of the characteristics of ACO and non-ACO practices.

## RACIAL DISPARITIES IN EXPOSURE TO TOXIC HEAVY METALS (NCHS)

*Justin Colacino – University of Michigan*
*Kelly Ferguson – University of Michigan*
*Shama Virani – University of Michigan*

Most studies of racial/ethnic disparities to heavy metal exposures have focused on identifying differences in exposure to individual compounds. Since exposure to a range of heavy metals can induce similar toxicologic outcomes, characterizing exposures to mixtures of heavy metals may provide more physiologically relevant estimations of environmentally induced disease. This project proposes to quantify racial and ethnic disparities in exposure to combination of toxic heavy metals with similar mechanisms of action:

lead, cadmium, arsenic, and mercury. Utilizing data from the National Health and Nutrition Examination Survey (NHANES) from 2003–2010, the researchers generated a "heavy metals score" (HMS) that incorporates measured concentrations of blood cadmium, blood lead, blood mercury, and urinary total arsenic into a single score. They identified that non-Hispanic black individuals were significantly more likely to be highly exposed to heavy metals compared to non-Hispanic whites, across all age groups studied. To

better characterize these differences, the project incorporates information about the urban/rural residential status of the NHANES study participants. The addition of these data will generate finer scale estimates of risk of heavy metal exposure based on both race/ethnicity and residential status. Additionally, it will permit identification of whether the racial/ethnic disparities described above are actually reflecting risk differences in heavy metal exposure in urban/rural individuals.

## ESTIMATING REGIONAL VARIATION IN SUGAR-SWEETENED BEVERAGE CONSUMPTION FROM 1999 TO 2012 (NCHS)

*Yun-Hsin Wang – Columbia University*

Reducing consumption of sugar-sweetened beverages (SSB) is a national public health priority. From 1999 to 2010, consumption of SSBs has declined by 30 percent among youth aged 2 to 19 and 23 percent among adults. However, reductions in SSB consumption over the period varied substantially across age, race/ethnicity, and sex. Although industry sales data documents significant variation in SSB consumption across regions in the United States, little is known about regional variation in SSB consumption

within demographic subgroups over time. This project evaluates the secular trends in regional SSB consumption patterns by demographic subgroups since 1999. Total energy intake and beverage intake (kcal and oz), including SSBs, diet beverages, juice, milk, coffee, tea, alcohol, and water, are estimated based on public data from youth and adult participants in NHANES from 1999 to 2012. Mean intake, proportion consuming any beverages, and dichotomized high consumption (≥500 kcal/day) will be estimated for each

beverage category by Census region (Northeast, Midwest, South, West) for subpopulations based on sex, age, race/ethnicity, BMI category, and household income. Regional variation in beverage intake will be evaluated in univariate comparisons, controlling for demographic composition in multivariable linear regression models adjusting for complex survey sampling methods. Regional variation in SSB consumption trends will be evaluated using time by region interaction terms in multivariable models.

## OBESITY, RACE, AND MORTALITY: THE ROLE OF COMPETING RISK (NCHS)

*Sarah Chiodi – Harvard Medical School Beth Israel Deaconess Medical Center*
*Christina Wee – Harvard Medical School*

While obesity is more prevalent in racial minorities, much of our understanding of obesity's influence and the basis of related public health policy comes from studies in Caucasian populations under age 65. The impact of obesity in racial minorities and older adults, however, is complex and uncertain. Prior work suggests that mortality associated with obesity in the general U.S. adult population is reduced substantially in African Americans relative to Caucasians. Observed racial differences in the obesity-mortality relationship may be due in part to methodological limitations of prior studies. Traditional analytic modeling techniques used in prior studies do not adequately account for competing mortality risks. By ignoring competing mortality risks, these studies likely underestimate the adverse effect of higher BMI on obesity-specific mortality generally and to a larger degree in African Americans than in Caucasians, because competing mortality risks such as homicide and HIV continue to be more important leading causes of death in African Americans relative to Caucasians. Using data from a nationally generalizable sample of over 300,000 U.S. adults aged 35 to 75, this project will examine the role of competing mortality risks more directly by applying a novel statistical modeling methodology designed to address this very issue. In clarifying the risk of obesity in African Americans, this research will provide critical data to enable development of cogent public health messages, shaping of public perception, and development of evidence-based clinical guidelines relevant and credible to African American populations.

## THE CONTRIBUTION OF CARDIOVASCULAR RISK FACTORS TO HEALTH EXPECTANCIES AND MEDICARE COSTS AMONG U.S. ADULTS (NCHS)

*David Frisvold – University of Iowa*
*Neil Mehta – Emory University*

Younger adults smoke less and exhibit higher levels of obesity than their predecessors, but the combined prevalence of smoking and obesity has remained roughly constant. Simultaneously, the prevalence of diabetes is increasing while enhanced treatments have improved cholesterol levels at the population-level. This project compares the health and cost implications of the changing behavioral pattern of U.S. adults. Recent evidence suggests that smoking's association with high mortality results in a compression of morbidity at older ages (i.e., smokers die relatively quickly after becoming sick at younger ages). The opposite may be true for obesity and diabetes. Obesity and diabetes may lead to an expansion of morbidity as they may lead to sickness/disablement early in life with moderate effects on mortality risks. This project compares the role of leading cardiovascular risk factors on mortality, health expectancies (e.g., time spent in unhealthy and healthy states,) and Medicare costs among U.S. adults. It examines trends in the relative risks for each of the risk factors. A byproduct of this research will be to provide explanations for the observed trends in the mortality of risks of obesity and smoking. Multiple NHANES surveys are used.

## TUSKEGEE AND DISPARITIES IN HEALTHCARE AND HEALTH OUTCOMES (NCHS)

*Marcella Alsan – Stanford University*
*Marianne Wanamaker – University of Tennessee*

Numerous studies have documented health disparities between blacks and whites in the United States. This research seeks to understand the role of mistrust in the healthcare system as a potential cause of historical and contemporaneous disparities. Because mistrust is difficult to observe, the research uses an historic episode as a proxy. The Tuskegee (Alabama) Study of Untreated Syphilis in the Negro Male passively followed black males with syphilis between 1932 and 1972 and failed to provide treatment despite the fact that the men in the study believed they were receiving free medical care. The deception was disclosed in 1972. Data from the National Health Interview Survey (NHIS) between 1968 and 1983 indicate that a key measure of health seeking behavior, log of the number of days to see a physician, plateaued and even slightly increased for black males in the years immediately following disclosure. This suggestive evidence leads to a hypothesis that the Tuskegee incident led to increases in mistrust among blacks and, in turn, racial disparities in both health seeking behavior and ultimate health outcomes. The hypothesis is tested by measuring whether black men who were more likely to be exposed to the news of the study, either due to spatial proximity to Tuskegee or to the distribution of media coverage of the story, had a larger change in their health seeking behavior following the 1972 disclosure. Both of these treatment measures are contingent on the location of the NHIS respondent.

## COMMUNITY CARE FOR ALL? HEALTH CENTERS' IMPACT ON ACCESS TO CARE (NCHS)

*Martha Bailey – University of Michigan*
*Lindsay Baker – University of Michigan*
*Morgan Henderson – University of Michigan*
*Anna Wentz – University of Michigan*

Since 1965, Community Health Centers (CHCs) have delivered primary and preventive health care at free or reduced cost to disadvantaged and uninsured Americans. Recently, both Republicans and Democrats have championed CHCs' expansion and they are integral to the Affordable Care Act (ACA). This project will attempt to fill gaps in knowledge about CHCs. The research aims to quantify the shorter- and longer-term impact of CHCs on health and economic outcomes by age and race and to examine how CHCs achieved these effects by quantifying their impacts on health care utilization. The project uses restricted information from the National Health Interview Surveys (NHIS) from 1973 to 2012 and the National Vital Statistics System (NVSS) on natality and mortality rates from 1959 to 2011 to achieve these aims. The NHIS geographic identifiers allow for linking the presence of CHCs in an area, and detailed earnings and date of birth information allow for estimating individuals' potential eligibility to use CHCs. The NVSS geographic identifiers and information on the date of birth and death permit estimating eligibility for CHCs at critical ages. Individuals in these data will not be linked, but instead are used to generate covariates from one dataset as a control variable in the other dataset. This study makes a substantial and policy relevant contribution to knowledge about CHCs' effects across places, time, and demographic groups. It also provides new evidence on CHCs' longer-term effects. The combination of historical studies with more contemporary evidence will significantly improve an understanding of CHCs and lay the foundation for future research.

## THE EFFECT OF THE U.S. WORKPLACE LACTATION SUPPORT LAWS ON BREASTFEEDING AND FEMALE LABOR SUPPLY (NCHS)

*Lindsay Baker – University of Michigan*

The American Academy of Pediatrics (AAP) recommends feeding breast milk or formula to infants for the first year of life. The AAP and other organizations promote breast milk as the better option of the two, citing the numerous health benefits correlated with breastfeeding. Increasing the breastfeeding rate has been the focus of many national and international public health campaigns, yet the effort still has fallen short of official targets, especially among disadvantaged populations. The decision of what to feed an infant is very personal, and many factors can influence it. In particular, a woman's employment status may significantly affect breastfeeding decisions. In recent years, breastfeeding support in the workplace has been a legislative focus in a number of states. Workplace lactation support laws vary among states in terms of existence and timing. The Patient Protection and Affordable Care Act of 2010 established a new national standard of breastfeeding support. One would expect that extremely supportive laws concerning better support of breastfeeding employees would lead to higher breastfeeding rates. These issues are crucial, especially for lower-income working-women who are likely to be most affected by unpaid leave and lack of employer support for breastfeeding. Using a difference-in-difference methodology, this project will exploit the variation in state laws to identify whether and by how much these laws impact breastfeeding behavior (initiation and duration) and labor force participation of mothers with children under the age of one. Access to restricted NIS data is necessary to identify the timing and location of the child's birth in relation to the laws. Additionally, access to raw demographic and breastfeeding data, as opposed to recoded data, is important to insure consistency in the statistical analyses.

## THE IMPACT OF MASSACHUSETTS HEALTH REFORM ON INSURANCE COVERAGE, HEALTH SPENDING, AND PREMIUMS (NCHS)

*Amanda Kowalski – Yale University*
*Rebecca McKibbin – Yale University*

In April 2006, the state of Massachusetts passed legislation aimed at achieving near-universal health insurance coverage. This project will estimate the impact of this legislation on insurance coverage, health care spending, and health plan premiums using the National Health Interview Survey (NHIS) of 2004–2010 and complementary data sources. Based on the findings, the researchers aim to investigate the welfare implications of the legislation. The welfare effects may be positive if the reform managed to correct for adverse selection in the Massachusetts pre-reform health insurance market. Adverse selection is a common concern in health insurance markets, which typically leads to inefficiently low levels of insurance coverage and extremely high premiums. In theory, mandating health insurance, as done in Massachusetts, will reduce adverse selection and may yield welfare gains. The researchers test this hypothesis empirically using the evidence from the Massachusetts health reform legislation.

## TRENDS IN CHILDHOOD OBESITY (NCHS)

*Michel Boudreaux – University of Maryland*
*Jason Fletcher – University of Wisconsin*

Overweight and obesity is a large problem among children in the United States, affecting 32 percent of all those under the age of nineteen. Recent evidence from the National Health and Nutrition Examination Survey (NHANES) suggests that, between 2003 and 2012, the obesity rate for two to five year olds declined by 5.5 percent, but remained unchanged for other age groups. This finding is encouraging, but the research behind this finding had important limitations. The research examined several age groups (nine in total), but did not adjust statistical significance levels for multiple-comparisons and thus may have understated the uncertainty in the estimates. Additionally, the NHANES is based on a small sample (roughly 4,000 child observations) which prevented the authors from examining trends in sub-groups of children. This project addresses these limitations using data from the National Study of Children's Health (NSCH). The NSCH has been conducted every four years since 2003 and contains data on roughly 100,000 children in each wave. The NSCH is uniquely suited to studying trends in overweight and obesity prevalence among the total population and in sub-groups. The project will make use of height and weight variables for preschool and elementary school age children that are suppressed from the public use files due to concerns over measurement quality. While the measurement quality of the NSCH parent-reported height and weight variables will prevent estimating unbiased prevalence estimates for a given time period, there is little reason to suspect that the measurement error is correlated with the year of interview. Therefore, estimates of change over time should accurately reflect the experience of the population.

## STATE-LEVEL ESTIMATES OF HEALTH INSURANCE COVERAGE, HEALTH CARE ACCESS, AND HEALTH STATUS (NCHS)

*Heather Dahlen – University of Minnesota*
*Brett Fried – University of Minnesota*
*Xuyang Tang – University of Minnesota*
*Joanna Turner – University of Minnesota*
*Karen Turner – University of Minnesota*

The recently enacted federal health reform legislation, the Patient Protection and Affordable Care Act of 2010 (ACA), is making significant changes to health insurance coverage and health care systems across the United States, with states responsible for many of the key elements of reform. This project analyzes the National Health Interview Survey (NHIS) to help states monitor the impacts of health reform. The research includes descriptive analyses that examine: (1) insurance coverage and lack of coverage, (2) access to and use of health care, (3) the affordability of care, and (4) health status. Analyses cover the overall population, by state or region, as well as for key population subgroups, such as subgroups defined by age, income, and health status.

## COVERAGE, ACCESS, AND HEALTH EFFECTS OF THE ACA MEDICAID EXPANSION (NCHS)

*Michael Dworsky – RAND Corporation*
*Christine Eibner – RAND Corporation*

As of January 1, 2014, twenty-five states had chosen not to implement the Affordable Care Act's (ACA's) expansion of Medicaid eligibility. The resulting interstate policy variation creates a valuable opportunity to estimate how the Medicaid expansion has affected its target population of low income adults not previously eligible for Medicaid. Using preliminary microdata files from the 2014 National Health Interview Survey (NHIS) and final release data from earlier years (2009 to 2013), this project conducts an evaluation of the effects of state Medicaid expansion decisions on insurance coverage, access to care, patterns of care seeking, health status, and mental health. The research design uses a difference-in-difference framework to distinguish changes in regression-adjusted outcomes associated with the Medicaid expansion from permanent differences between states and from nationwide changes associated with ACA implementation. A challenge for this approach is that the early-release NHIS does not contain sufficiently detailed income data to determine Medicaid eligibility for much of the expansion's target population in states not moving forward with the expansion. The researchers use an auxiliary public-use dataset to impute Medicaid eligibility as a function of characteristics observable in the early-release NHIS. NCHS use state geocodes to merge Medicaid expansion status and imputed Medicaid eligibility onto the 2009–2013 final release files, permitting leverage of additional cross-state variation in Medicaid income limits prior to the ACA expansion while measuring the impact of the Medicaid expansion on the entire population of adults in families below the federal poverty level.

## ECONOMIC INEQUALITY AND POPULATION HEALTH (NCHS)

*Timothy Johnson – University of Illinois at Chicago*
*Marina Stavrakantonaki – University of Illinois at Chicago*

There is growing recognition that unequal economic opportunities are associated with negative population outcomes. Previous research has documented national- and state-level associations between measures of economic inequality and multiple indicators of population health status and health risks. This project investigates associations between more proximate community-level measures of economic inequality and the health status of individuals. It employs data from the 2012 National Health Interview Survey (NHIS) and census tract and county data to investigate relationships between local income inequality indices (i.e., the Gini coefficient) and a set of self-reported health status indicators. Health status measures examined include those available in the public-use version of the 2012 NHIS, including global health ratings, health care visits and hospitalizations, and the presence of several chronic and acute health conditions. Using multivariate hierarchical models, the research controls for potential confounding variables at the individual level (i.e., age, gender, race/ethnicity, education, income).

## EXAMINING THE IMPACT OF SEGREGATION ON RACIAL/ETHNIC AND EDUCATION DIFFERENCES IN ALLOSTATIC LOAD LEVELS AND MORTALITY RISKS (NCHS)

*Jeffrey Howard – Brooks Army Medical Base*
*Patrice Sparks – University of Texas at San Antonio*

Allostatic load (AL) is a composite measure of the overall wear and tear, or degree of biological dysregulation, which accumulates over time as one is exposed repeatedly to stressful environments. The current state of knowledge suggests that allostatic load levels are higher for racial/ethnic minorities, individuals with low incomes or living in poverty, and individuals with low educational attainment, and that these relationships persist in multivariate regression models even when adjusting for many covariates. What remains unclear is the specific pathways linking race/ethnicity to higher stress burdens and mortality chances, and whether or not other socioeconomic and structural factors modify how these pathways operate. Initial analyses by the researchers using four waves the National Health and Nutrition Survey (NHANES) gathered between 2003 and 2010, suggest that AL differs significantly by age, race/ethnicity, and educational attainment, specifically completion of a college degree or more. Separate education stratified models suggest that AL levels do not differ by race/ethnicity for individuals with less than a high school level education, but instead the largest AL differentials appear at higher levels of educational attainment, specifically for individuals with a college degree or more. Additional results suggest AL is significantly associated with increased mortality risks for all causes of mortality and for specific causes of death, independent of other factors. This project examines the roles of education and residential segregation in modifying the relationship between race/ethnicity and stress levels, as measured by allostatic load and ultimate mortality risks, using the four waves of the NHANES 2003–2010 combined with different measures of segregation (dissimilarity, isolation, normalized exposure index, and multi-group segregation (Theil's H)) taken from U.S. Census data merged at the census tract. This will permit an assessment of how segregation may modify the education-AL relationship and its impact on mortality chances.

## UNIVERSAL HEALTH INSURANCE AND THE ADEQUACY AND EFFICIENCY OF HEALTH CARE (NCHS)

*Adrienne Sabety – Harvard University*
*Kevin Todd – University of California, Berkeley*

This project examines how the availability of Medicare at age 65 affects an individual's use of medical services at the doctor's office, at outpatient clinics, and at emergency departments, specifically for the treatment of chronic conditions. The project will also examine changes in treatment intensity for patients admitted to hospital for acute myocardial infarction. The results of this project will be directly policy-relevant as they will help to quantify the effects of insurance coverage (or lack of coverage) on the efficiency and efficacy of the health care delivery system for older adults as well as the effect of expanding health insurance coverage.

## EARLY EVIDENCE OF THE EFFECTS OF THE 2014 ACA EXPANSIONS (NCHS)

*Sharon Glied – New York University*
*Stephanie Ma – New York University*
*Claudia Solis-Roman – New York University*

The goal of this study is to provide early estimates of the effects of the Affordable Care Act's first period of open enrollment using the first and second quarter 2014 early release National Health Interview Survey (NHIS) data and prior full year samples. Research will identify trends in type of coverage (high deductible, Medicaid, and others), health characteristics of insured and uninsured groups (e.g., chronic conditions), and patterns of healthcare utilization in this population to see who has been affected by changes in access to coverage. The project will compare data from states that used a federally-facilitated marketplace (FFM) or operated a state-based marketplace (SBM; 17 states) and states which expanded or did not expand Medicaid as of October 31, 2013. Use of the early release NHIS data will allow for estimates following the effects of the first enrollment period. Emphasis will be on the effects of the expansion by linking data on the date of interview and state exchange/Medicaid status and by type of exchange with data from previous years that includes state identifiers to analyze changes in utilization and insurance rates. This analysis is particularly important because of its timeliness and because the Current Population Survey, a principal source of this information, recently changed questionnaires, complicating historical inferences. Restricted data from the NHIS has asked similar questions consistently over time and has an early release program, which provides the information necessary for this timely study.

## EARLY LIFE MORTALITY IN THE UNITED STATES (NCHS)

*Elizabeth Lawrence – University of North Carolina at Chapel Hill*
*Richard Rogers – University of Colorado*

Although U.S. early life mortality rates are magnitudes lower than later life mortality rates and have continued to decline, they remain unacceptably high, particularly for some population subgroups. Nonetheless, social demographic and epidemiological research on early life mortality, especially beyond infancy, has been scarce over the past several decades. This scarcity is most likely because research attention has focused on other stages of the life course given that deaths are highly concentrated at older ages, and because there are very few large, nationally representative U.S. data sets that facilitate research on early life mortality. However, U.S. infants, children, adolescents, and young adults are growing up in a context of widening socioeconomic inequality and rapidly changing family structures. Overall, such social and economic changes may differentially affect early life mortality risks, with particularly harmful consequences for the most vulnerable population subgroups. But, very little recent research has examined early life mortality disparities and trends in the context of these broad social and economic changes. The researchers use the recently released National Health Interview Survey Linked Mortality Files, using multivariate logistic regression analyses, to examine patterns and trends in early life mortality within the United States.

## THE DETERMINANTS OF AVOIDANCE BEHAVIOR (NCHS)

*Daniel Phaneuf – North Carolina State University*
*Austin Williams – University of Wisconsin–Madison*

This project explores how individual characteristics influence how a person interacts with the environment. A person with asthma likely will value air quality in a different way than someone without the condition. Alternatively, an obese person might allocate less time to active leisure choices such as outdoor recreation and therefore be less hesitant to substitute away from outdoor activities on poor air quality days. Establishing these types of relationships is important because personal characteristics may motivate decisions that could in turn feedback to affect future health outcomes. When exploring how environmental pollution impacts human health, researchers often try to connect pollution exposure to health outcomes, essentially deriving a dose-response function. The analytical challenge is straightforward; when trying to establish how ambient levels of pollution influence negative health outcomes, failing to account for individual behavior aimed at avoiding exposure will lead to a downward bias in the marginal effect of pollution on health. In the context of air pollution, avoidance behavior can take on many forms, including wearing a mask or spending less time outdoors on poor air quality days. In addition to being an important factor in estimating the marginal effect of pollution, avoidance behavior can be costly to an individual. This project investigates how individual characteristics impact time preferences and values for environmental quality, and how these values influence if and how an individual responds to warnings about poor air quality.

## MEDICAID COVERAGE OF SMOKING CESSATION TREATMENT: EFFECTS ON SMOKING BEHAVIOR AND HEALTH (NCHS)

*Allison Witman – RTI International*

The project involves a comprehensive analysis of the effects of Medicaid coverage of smoking cessation therapies (SCTs) on adult smoking and child health. SCTs include products such as the nicotine patch, inhaler, and gum and pharmaceuticals. In previous work, the researcher has shown that Medicaid coverage of SCTs reduces smoking among low-income parents who are likely to be eligible for Medicaid. This reduction in smoking is concentrated among women who have very young children, suggesting the mothers quit smoking during pregnancy or shortly after birth. Consequently, Medicaid coverage of SCTs may have the benefit of reducing secondhand smoke exposure among children in utero and during childhood. The researcher will test whether reductions in parental smoking resulting from the benefit cause improvements in child health as measured by birth weight, asthma attacks, ear infections, sickness, days of school missed, and other indicators.

## EFFECTS OF HAZARD EXPOSURE ON HEALTH CARE UTILIZATION AND COSTS (NCHS)

*Jennifer Horney – Texas A&M University*
*Nathanael Rosenheim – Texas A&M University*

The challenges of building a more resilient future include a number of threats: an aging population who increasingly live in areas highly vulnerable to natural hazards at a time when the number and severity of large-scale natural disasters impacting the U.S. is increasing (National Research Council 2006). Prior research demonstrates that the elderly suffer disproportionately from disasters, and are more likely to experience morbidity, mortality, or other health impacts as the result of disasters than are younger people. However, these findings are based largely on disaster specific case studies with relatively small sample sizes, rather than national-level evaluations using standard variables that can be compared across disasters, over time, and in different geographic locations. Because of the focus on a single event, case study research limits our capacity to enhance the resilience of the elderly to future disasters of a different type, scale, or location. The contribution of the proposed research is expected to be a large-scale evaluation of the effects of disasters on the health system utilization of the elderly using confidential data to estimate the impacts of disasters on health and health systems and to examine trends related to health system utilization over time. To determine the association between hazard exposure and health system utilization and control for time-invariant confounders the researchers propose a fixed effects regression model to conduct within person comparisons from 1999 to 2007 across the United States. The results of the proposed project will support improved planning, preparedness, and the development of early interventions that will contribute to enhanced disaster resilience among individual elderly and the Medicare system overall.

## ENFORCEMENT AND MENTAL HEALTH (NCHS)

*Catalina Amuedo-Dorantes – San Diego State University*
*Mehmet Yaya – Eastern Michigan University*

Immigration enforcement in the United States has climbed to extraordinary levels since the passage of the Illegal Immigration Reform and Immigrant Responsibility Act of 1996. Apprehensions and deportations of unauthorized immigrants have reached an unprecedented level in U.S. history. Not surprisingly, immigrants are reporting increased fear of profiling and deportation. Some researchers have pointed out the negative consequences that living under increased fear of deportation has on children with unauthorized parents—a group consisting of an estimated 5.5 million children and, of whom, three-fourths are U.S. citizens. Fear, isolation, and economic hardship endured by parents translate into depression, separation anxiety disorders, post-traumatic stress disorders, and suicidal thoughts among children. This project examines the impact of enhanced local and state immigration enforcement on the mental and physical health of native children with non-citizen parents. It combines micro-level data from the 2006 through 2013 Household, Person, Family, and Sample Adult public and restricted files of the National Health Interview Survey (NHIS) and local- and state-level data on the implementation of more stringent immigration enforcement measures. The research compares changes in the mental health of native children with at least one non-citizen parent to changes experienced by their counterparts residing in households with two native and/or naturalized parents before and after the implementation of stringent immigration enforcement measures.

# ISCHEMIC HEART DISEASE AND LUNG CANCER MORTALITY IN RELATION TO RESPIRABLE PARTICULATE MATTER AND DIESEL EXHAUST IN NON-METAL MINERS (NCHS)

*Sadie Costello – University of California, Berkeley*
*Andreas Neophytou – University of California, Berkeley*
*Sally Picciotto – University of California, Berkeley*

Miners are exposed to far higher levels of respirable particulate matter (PM) and diesel exhaust than are found in urban ambient environments in the United States. The U.S. Environmental Protection Agency standard for PM2.5 is 0.035 mg/m3—two orders of magnitude lower than the MSHA standard for respirable dust. Yet PM in traffic-related air pollution is recognized as an important risk factor for ischemic heart disease (IHD) based on a vast epidemiologic literature, and heart disease has rarely been studied in working populations. This project addresses the gap in the occupational health literature by studying miners who are heavily exposed to diesel, as measured by respirable elemental carbon (REC), and respirable particulate matter (RPM), mostly from crustal sources. If respirable dust exposure also contributes to the risk of heart disease in miners, then the total disease burden would be far greater. The current MSHA exposure limit for diesel exhaust of 160 µm/m3 total carbon (TC) may also be too high to protect miners against excess risk of heart disease. The challenge in this research is to estimate the exposure-response relationships between respirable PM, diesel exhaust, and IHD mortality in a cohort of miners without bias due to the healthy worker survivor effect (HWSE) or confounded by cigarette smoking. DEMS, originally designed to study lung cancer, offers an opportunity to examine IHD mortality in relation to both respirable PM and diesel exhaust (measured as elemental carbon (REC)) with a focus on bias reduction and causal inference. There are already two excellent publications on lung cancer mortality in DEMS, including a cohort study and a nested case-control study adjusted for smoking. The results of both, however, could have been attenuated due to HWSE. In order to make sure the published relative risks were not underestimates, this project applies the same focus on bias reduction in a reanalysis of lung cancer as in a new study of IHD.

## UNEMPLOYMENT AND UNINTENDED FERTILITY (NCHS)

*Jessica Su – SUNY Buffalo*

Extant research links periods of economic crisis with net declines in fertility, yet it does not explore changes in intended and unintended fertility that underlie this demographic shift. As a result, important variation in fertility intentions (whether a birth was planned or unintended at the time of conception) might be obscured. For example, it is possible that periods of economic crisis are linked with increased unintended childbearing and decreased planned childbearing while still yielding a net decline in fertility overall. This shift may have important implications for public health, as empirical research has established that unintended fertility is associated with poor parental and child well-being. This research addresses this gap in the literature with an explicit focus on the relationship between county-level unemployment and individual-level fertility intentions. This project will extend existing literature that links unemployment and joblessness with increases in non-marital fertility. Although prior research focuses on union formation and non-marital fertility, fertility intentions are an increasingly salient concept for family research given the weakening link between marriage and childbearing. This study therefore reflects contemporary demographic trends in family formation and economic contexts.

# PROVIDING PRIMARY CARE IN A CHANGING HEALTHCARE ENVIRONMENT: ARE FEDERALLY QUALIFIED HEALTH CENTERS UP TO THE CHALLENGE? (NCHS)

*Jenefer Jedele – University of Michigan*

In many communities, access to primary care is absent, unaffordable, or otherwise inaccessible despite ever increasing demand. Sixty-two million people in the United States were without adequate or any access to primary care in 2014. Those lacking access to primary care are also disproportionately low-income, uninsured, and racial/ethnic minorities. Since 1965, Federally Qualified Health Centers (FQHC) have acted as principal providers of primary care for those living in communities lacking adequate access. As of 2013, there were 1,202 FQHCs serving 21.7 million patients, of whom 93 percent were below 200 percent of the Federal Poverty Level, 35 percent were uninsured, 62 percent were racial/ethnic minorities, 4 percent were migrants, and 23 percent were best served in a non-English language. These populations are also those that experience the greatest disparities in health. By directly affecting access, FQHCs have also reduced disparities in health. Recently FQHCs received substantial financial support through the American Relief and Recovery Act of 2009 (ARRA), and the Patient Protection and Affordable Care Act of 2010 (ACA). ARRA provided more than $2 billion and ACA provides $11 billion directly to FQHCs for ongoing operations, new sites, and expanded services. Several additional ACA provisions are expected to bolster the ability of FQHCs to accommodate new demand, while adding and expanding still needed services. Immediately playing the pivotal role expected of them in accommodating the anticipated increase in demand for primary healthcare will be challenging for FQHCs as they also adapt to new organizational structures and payment systems. This project examines the impact of the recession, ARRA, and ACA on the capacity of FQHCs to provide primary care services, the ability to accommodate the expected increase in demand, and the perception of access to care in and demographic and health composition of the communities that FQHCs serve.