Abstract Session E2: Health Disparities

Undiagnosed and Uncontrolled Hypertension and Hyperlipidemia among Immigrants in the United States  

Leah Zallman 1; David Himmelstein 2; David Bor 3; John Ayanian 4; Andy Wilper 5; Danny McCormick 6.  
1Cambridge Health Alliance/Harvard Medical School, Cambridge, Massachusetts; 2Cambridge Health Alliance/City University of New York School of Public Health, Cambridge, Massachusetts; 3Cambridge Health Alliance, Jamaica Plain, Massachusetts; 4Brigham and Women’s Hospital, Boston, Massachusetts; 5University of Washington School of Medicine, Boise, Idaho; 6Cambridge Health Alliance, Cambridge, Massachusetts. (Proposal ID # 11494)

BACKGROUND: Cardiovascular disease is the major cause of mortality among both the native and foreign born. Hypertension and hyperlipidemia are major modifiable risk factors for cardiovascular disease. We are unaware of nationally representative studies examining differences between immigrants and the native born in rates of undiagnosed and uncontrolled hypertension or hyperlipidemia, or the impact of insurance status on these relationships.

METHODS: We conducted a cross sectional analysis of a nationally representative sample of adults from the National Health and Nutrition Examination Survey (NHANES), 1999-2008 to assess the risk of having undiagnosed and uncontrolled hypertension and hyperlipidemia among foreign born (FB) individuals relative to the native-born. Participants were considered diagnosed if they reported (1) being told by a physician or health professional that they had the condition or (2) taking medications for the condition. They were considered undiagnosed if they had physical exam or laboratory findings of the condition (hypertension: SBP>140 mmHg or DBP>90mmHg; hyperlipidemia: not reaching Adult Treatment Panel II or III goals) but were not diagnosed. Participants were considered uncontrolled if they were either diagnosed or undiagnosed but did not meet accepted criteria for control (hypertension: SBP>140 mmHg or DBP>90mmHg; cholesterol: not reaching Adult Treatment Panel II or III goals). We used logistic regression analysis to determine the odds of having undiagnosed and uncontrolled hypertension and hyperlipidemia, among FB compared with US-born participants. Our initial models adjusted for place of birth, age and gender. We then sequentially added health insurance, income and race/ethnicity to explore whether these factors explained differences in diagnosis and control rates between the FB and US-born.

RESULTS: Of 28,821 adults, the 6,601 FB were younger, more likely to be male; Hispanic or other ethnicity; have incomes <$20,000 or missing; be uninsured; and to speak primarily Spanish, Spanish and English equally, or other language at home, as compared to US-born. In age-and-gender adjusted analyses, FB were more likely to have undiagnosed hypertension (OR 1.35, 95%CI 1.12-1.62, p 0.0016), uncontrolled hypertension (OR 1.38, 95%CI 1.16-1.64, p=0.0004), undiagnosed hyperlipidemia (OR 1.32, 95%CI 0.98-1.78, p=0.0656), and uncontrolled hyperlipidemia (OR 1.32, 95%CI 0.98-1.77, p=0.0683), although these last two outcomes were of borderline significance. Adjusting for insurance status moderately attenuated the association between foreign birth and all outcomes, although hypertension control and diagnosis remained statistically significant. Adjustment for income had little effect on the findings. Additional adjustment for race/ethnicity further attenuated the association of foreign birth with hypertension diagnosis and control (no longer statistically significant).

CONCLUSION: Immigrants are at increased risk of undiagnosed and uncontrolled hypertension, and may be at risk of undiagnosed and uncontrolled hyperlipidemia. These disparities are substantially reduced by controlling for insurance. Improving immigrants' rates of insurance coverage could decrease their risk of undiagnosed and uncontrolled cardiovascular risk factors and may therefore reduce future cardiovascular morbidity and mortality.
BACKGROUND: The Agency for Healthcare Research and Quality (AHRQ) developed the Consumer Assessment of Healthcare Providers and Systems (CAHPS) as a patient-administered assessment of healthcare quality in diverse settings. Health plans (public and private) are required to report CAHPS data to the federal government as a quality of care metric. While CAHPS has been extensively validated among insured patients, it is less clear how it performs with ethnically diverse, uninsured populations. Adding a culturally competent care domain makes CAHPS more relevant to diverse, uninsured, safety-net, and other vulnerable populations, and may inform the development of interventions to reduce healthcare inequalities. Therefore, the Consumer Assessment of Healthcare Providers and Systems Cultural Competency survey (CAHPS-CC) was developed as a supplement to CAHPS, with the intention that it would be broadly administered with the CAHPS survey. We examined CAHPS-CC's suitability for administration in a safety-net setting.

METHODS: We performed exploratory factor analyses and confirmatory factor analysis for ordered categorical measures of the CAHPS-CC to describe the measurement structure of the question set and identify subscales. Our sample included 600 patients with type 2 diabetes receiving primary care in safety-net clinics in Chicago and the San Francisco Bay Area. We used Cronbach's alpha to assess internal consistency and multinomial logistic regression to assess the extent to which culturally competent care explained global physician ratings.

RESULTS: A seven-factor model demonstrated satisfactory fit (RMSEA =0.43; CFI = 0.96; TLI = 0.96). Three domains showed excellent internal consistency: positive provider communication (Cronbach alpha=.82), trust (Cronbach alpha=.77), and health promotion (Cronbach alpha=.72). Three domains showed reliability below our a priori cut point: equitable treatment (Cronbach alpha=.69), alternative medicine (Cronbach alpha=.52), and shared decision-making (Cronbach alpha=.51) but these were all 2-item scales (for which lower scores are expected). The negative provider communication and equitable treatment domains had adequate reliability among English speakers but poor reliability among Spanish speakers. CAHPS-CC domains accounted for 5.9% (alternative medicine) to 26.2% (positive communication behavior) of the variance in global physician ratings.

CONCLUSION: CAHPS-CC is suitable for broad-scale administration among patients, particularly English-speakers, receiving care in safety-net settings. The provision of culturally competent care is instrumental to patient satisfaction in this population, as demonstrated by the high impact of CAHPS-CC subdomains on global physician ratings. CAHPS-CC may be used to target quality-improvement efforts focused on providing culturally competent care.
Navigating Public Housing Residents into Primary Care: A Readiness Assessment

Tracy A Battaglia 1; Samantha S Murrell 1; Sarah E Bhosrekar 2; Sarah E Lane 1; Linda R Stanley 3; Deborah J Bowen 3; Jo-Anna Rorie 3. 1Boston University School of Medicine, Boston, Massachusetts ; 2Boston University School of Public Health, Boston, Massachusetts ; 3Colorado State University, Fort Collins, Colorado . (Proposal ID # 11629)

BACKGROUND: Residents of public housing are at increased risk of living with uncontrolled chronic disease, including heart disease, stroke, and diabetes. The Boston University Partners in Health and Housing Prevention Research Center aims to improve the health of Boston Public Housing Residents through community-based participatory research conducted in collaboration with public housing residents and local community organizations. Despite close proximity to community health centers and comprehensive academic medical centers, previous work has shown that public housing residents face many barriers to engaging in primary care. This collaboration of residents, community organizations, and academic researchers identified cardiovascular disease prevention (heart health) as a health priority for programs targeting public housing residents. As formative work for an intervention study, we conducted this research to (1) compare the readiness of housing developments versus community health centers to address heart health through a community-based intervention, and (2) to provide a framework for an intervention to bridge residents of public housing developments and primary care services within the community health centers.

METHODS: Using the Community Readiness Model, key informant interviews were conducted across 15 community settings: 8 public housing developments and 7 nearby community health centers. Four to 6 interviews were conducted in each community setting. Key informants were identified by community leaders as knowledgeable about ongoing efforts in their respective community. Housing development key informants included residents, resident leaders, and management, while health center key informants included leadership, clinical staff, support staff, and outreach workers. Using a previously validated scoring system, each community received a composite readiness score, which ranged from 1-9, corresponding with their readiness to engage in heart health prevention activities, with higher scores indicating higher levels of readiness. These composite scores were further analyzed across 6 dimensions of readiness. Interview transcripts were also reviewed for consistent themes.

RESULTS: Preliminary findings from 78 key informant interviews (42 housing development residents and 36 health center staff) found health centers have significantly higher levels of readiness to engage in heart health prevention activities (mean 5.3) compared with housing developments (mean 2.8). Both health centers and housing developments scored highest in existing programs and policies to address heart health (health center mean 6.1; housing development mean 3.6) and the resources available to address the issue (health center mean 5.7; housing development mean 3.5). Both health centers and housing developments scored lowest in community knowledge of heart health programs (health center mean 5.1; housing development mean 2.1). An overall score of 5 indicates that health centers are in the preparation phase, and their goal to progress to the next level of readiness is to continue to gather pertinent information and work with key leaders around prevention activities. For housing developments, an overall score of 2 is the denial/resistance phase, and efforts to increase education and awareness of heart health and prevention programs is needed for the community to progress to the next stage of readiness. Preliminary qualitative analysis demonstrates a lack of current partnerships between housing development and community health centers, yet an interest in partnering to address heart health in both settings.

CONCLUSION: Our findings confirm a mismatch in community readiness to address heart health between housing developments and community health centers. Although the community health centers have programs to address health issues, community awareness of programs is limited. The readiness scores will guide the intervention strategies we use in each unique community, and we will focus on stage-specific goals in order to better align housing development readiness with community health center readiness. Eliciting perspectives of key stakeholders (residents of each housing development and staff of each corresponding health center) when developing an intervention around a community-identified health priority ensures community buy-in and support for program implementation. We plan to pilot the intervention at four public housing developments.
Unexplained Gender Differences in Dyslipidemia in Patients with Type 2 Diabetes  

John Billimek 1; Priel Schmalbach 1; Shaista Malik 1; Dara H. Sorkin 1; Quyen Ngo-Metzger 1; Sheldon Greenfield 1; Sherrie H. Kaplan 1. 1University of California, Irvine, Irvine, California . (Proposal ID # 11791)

BACKGROUND: Gender differences in dyslipidemia are well documented. Less well-studied are the contributors to those differences such as disparities in overall quality of care, lipid-specific management (including regimen intensification) and patient preferences and behaviors. The objective of this study was to examine the relationship between dyslipidemia, quality of care, patient adherence and patients' health habits among adult patients with Type 2 diabetes.

METHODS: The patient sample (n=1361) was drawn from participants in the Reducing Racial Disparities in Diabetes Coached Care (R2D2C2) study. Survey based measures included the 63-item Total Illness Burden Index, a 13-item measure of passivity, a 13-item measure of medication adherence, and a 9-item measure of diet, exercise and smoking history. Medical records were abstracted for lipid, blood pressure and HbA1c values, medication history, and diabetes quality of care indicators. Student's t was used to compare unadjusted gender differences in patient characteristics, preferences and behaviors. Logistic regression equations were used to investigate gender differences in lipid management and lipid values, adjusted for patient age, education, ethnicity, duration of diabetes, passivity, adherence, health habits, history of coronary heart disease and other co-morbidities.

RESULTS: Compared to men, women in the sample had less total comorbid disease burden, more were Hispanic, and fewer had a history of prior coronary heart disease (all p's<.05). Women reported poorer adherence to treatment compared to men (p<.05). There were no significant differences between men and women in age, mean systolic blood pressure or HbA1c values, health habits (diet, exercise, smoking) or any of the diabetes quality process indicators. However, fewer women (44.4%) than men (32.1%) attained the recommended target for lipid control (LDL<100 mg/dl) adjusted for demographic characteristics, health habits, passivity and adherence (adjusted OR=1.56, p<.001). Women were significantly less likely to be treated intensively with 2 or more classes of cholesterol lowering medications (12.7% women versus 17.1% men; adjusted OR=0.68, p<.05).

CONCLUSION: Data from this study suggests that gender differences in dyslipidemia may be due to less intensive lipid management, despite otherwise comparable quality of diabetes care, taking into account patient health habits, total disease burden, passive approach to healthcare management and adherence to treatment.
Vision Impairment among Older Adults in an Urban, Low-Income Neighborhood: Implications for Diabetes Prevention and Management

Michelle A. Ramos 1; Thalia MacMillan 2; Lawrence C. Kleinman 3; Carol R. Horowitz 3. 1Union Settlement Association, New York, New York; 2Lighthouse International, New York, New York; 3Mount Sinai School of Medicine, New York, New York. (Proposal ID # 11819)

BACKGROUND: Racial and ethnic disparities exist in diabetes prevalence and complications, including visual impairment and loss. Recent emphasis on the impact of health literacy on health and health behaviors may overlook the fact that patients may simply not be able to see well enough to read food and medication labels, monitor glucose, take medications and insulin correctly and be safely physically active. The Communities IMPACT Diabetes Center uses a collaborative approach to explore and address diabetes-related health disparities. As part of this work, community and academic partners assessed the prevalence of visual impairment and the vision-related physical environment in East Harlem, the neighborhood with the highest diabetes morbidity and mortality in New York City.

METHODS: We designed an environmental assessment to explore characteristics of the built environment in a 16 square block sub-section of East Harlem, including the presence of health and eye care facilities and the condition of sidewalks. Using a structured data collection form, community-academic pairs assessed each block. In addition, we partnered with a vision rehabilitation agency, to survey older adults attending East Harlem senior and community centers. Domains included the Functional Vision Screening Questionnaire, receipt of eye care within the past year, demographics and comorbidities.

RESULTS: The environmental assessment revealed less than optimal walkability. Only 53% of sidewalks assessed were characterized as being in good condition and 30% had some type of obstruction. No eye care facilities were identified. With respect to the vision health survey, 555 adults (36% age 75 and older, 44% age 65 to 74, 17% age 55 to 64, and 3% younger than 55) participated, of which 75% were Hispanic and 20% African American. Half had not had their eyes examined within the past year, 26% met criteria for having low vision and 30% self-reported diabetes. Over half (52%) stated that their vision makes it difficult to do things that they would like to do, 58% reported difficulty recognizing faces of family and friends, 44% reported difficulty reading regular size print and 49% reported difficulty reading medicine labels, small print and prices when shopping. Of the total sample, 41% had regular eye care and did not need follow-up, 12% chose to see a local provider and 15% declined care or were lost to follow-up. The remaining 175 adults (32%) received free eye care services, and all but one (99%) needed and received new glasses. Their most common visual comorbidities included cataracts (22%), age-related macular degeneration (17%), glaucoma (13%) and diabetic retinopathy (9%).

CONCLUSION: Effective approaches to prevent and control diabetes, including self-management, physical activity and healthy eating, require adequate vision or vision support. The majority of older adults we surveyed had visual difficulties that could be simply addressed through provision and use of glasses. Poor environmental conditions, such as obstructed sidewalks, could make it even more difficult for seniors to adhere to the most commonly prescribed form of exercise - walking. In addition to addressing well-known barriers to diabetes prevention and control, including behavioral and access issues, people with or at risk for diabetes could benefit from providers and policymakers recognizing, understanding and addressing visual challenges. Clinicians should consider routinely asking patients if they experience any difficulties seeing during discussions about medication adherence and self-management, and referring their patients for eye care.
Multi-Level Intervention To Control Hypertension In African Americans: The CAATCH Trial Gbenga Ogedegbe 1; Jonathan Tobin 2; Joseph Schwartz 3. 1NYU School of Medicine, New York, New York; 2Clinical Directors Network, New York, New York; 3SUNY Medical School, Stony Brook, New York. (Proposal ID # 11953)

BACKGROUND: Hypertension-related outcomes explain the most mortality gap between African Americans and whites. Despite effective blood pressure (BP) control interventions, these approaches have not been translated into clinical practice for African Americans. We evaluated the effectiveness of a multilevel evidence-based intervention [targeted at physicians and patients] in improving BP control in hypertensive African Americans in 30 community health centers (CHCs).

METHODS: Counseling African Americans to Control Hypertension (CAATCH), a cluster randomized clinical trial, compared an Intervention (IC, n=15) consisting of three patient-level components (interactive computerized hypertension education, home BP monitoring, monthly lifestyle modification counseling) and two clinician-level components (monthly Hypertension Guidelines (JNC-7) case rounds, chart audits/feedback) with Usual Care (UC, n=15). The primary outcome was the rate of BP control (BP<140/90 for all patients; or<130/80 for diabetic patients) at 12 months by automated BP monitor (BPTru BPM-300). Secondary outcome was Office BP (extracted from medical records) at 12 months. Of 1059 recruited, 71% completed the trial (mean age 56 yrs, 60% obese, 35% diabetes, baseline BP (+SD) 149/90 (+21/13 mmHg).

RESULTS: Using intent-to-treat analysis, BP control at 12 months by BPTru (adjusted for baseline BP, diabetes, Charlson comorbidity, resistant hypertension) was IC=59.9% vs. UC=55.1% [OR=1.22 (95%CI 0.95-1.57)]; and mean Office BP at 12 months was IC=135.4 mmHg vs. UC=141 mmHg (p<0.01). In pre-specified subgroup analyses, the intervention was associated with greater BP control for patients without diabetes [IC=61.6% vs. UC=53.6%, OR=1.39 (1.02-1.9)]; and patients who received care in small CHCs [IC=62.5% vs. UC=52.2%, OR=1.53(1.08-2.15)].

CONCLUSION: In African Americans with poorly controlled hypertension, while a practice-based multilevel intervention did not significantly improve BP control by BPTru, it was associated with significant improvement in Office BP; thus suggesting that BP targets can be reached in this high-risk population. Our findings suggest that evidence-based multilevel interventions can be integrated into primary care practices with significant potential for improving BP control in hypertensive African Americans.