Barriers to Breast Care for Underserved Women Pamela Ganschow 1; Joann Elmore 2; Arthur Evans 3; Monica Peek 1. 1Rush University Medical Center/Stroger Hospital, Chicago, Illinois; 2University of Washington, Seattle, Washington; 3Weil Medical Center, New York, New York. (Proposal ID # 10196)

BACKGROUND: Underserved women are at increased risk for diagnostic delays during evaluation of breast abnormalities. Patients' perceptions of reasons for these delays are poorly understood. The objective of this study was to identify patients' perceptions of evaluation time and barriers to care, and to examine the association between identified barriers and delay time, among women with suspicious breast findings who use a safety-net health care system.

METHODS: We conducted a prospective study of 270 predominantly English- and Spanish-speaking women (minimum age 30 years) undergoing non-operative breast biopsy between 2006 and 2009 at a large public hospital. The hospital receives referrals from over 210 affiliated primary care clinics serving uninsured and under-insured patients. At the time of biopsy or before disclosure of results, in-person interviews were conducted to gather information on demographics, socioeconomic status, clinical history, self-reported personal and system reasons for delays in care, and patients' perceptions of their evaluation time. "Time to biopsy" was defined as the time from initial detection of the breast abnormality to initial biopsy and "evaluation time" was defined as the time from first contact with the health care system to the date of initial biopsy. The clinical history including date and mode of detection (e.g., self- or image-detected) and all healthcare visits for the breast problem were verified through medical record abstraction. We used a CDC recommended 60-day benchmark for defining appropriate evaluation time. Univariate and multivariate analyses with backwards elimination were performed using quantile regression to examine differences in median time to initial biopsy by patient characteristics, mode of detection, and personal and system reasons for not seeking evaluation sooner.

RESULTS: The mean age was 51 years; 49% were Black, 36% were Hispanic, 74% were uninsured, and 39% reported no access to a regular provider. Among the 270 women, 47% had self-detected breast abnormalities and 53% had abnormalities detected by imaging. Median time to biopsy was 120 days (IQR: 62-202) and median evaluation time was 92 days (IQR: 42-174). These median times did not differ significantly by mode of detection. For 64% of women, evaluation was delayed by > 60 days and over 50% of these women did not perceive this as too long. The most common personal reasons for delays were fear of having breast cancer (46%), fear of evaluation or treatment (46%), financial concerns or lack of insurance (43%), and belief that the problem was not serious (37%). The most common system reasons reported were difficulties obtaining a clinic appointment (40%) and having one or more appointments rescheduled by the doctor or clinic (36%). After controlling for covariates, only the system reason of "having appointments rescheduled by the doctor or the clinic" was associated with a statistically significant increase in the median time to initial biopsy of 54 days (95% CI: 31-77 days; p<0.001). Having a family history of breast cancer was associated with a statistically significant decrease in the median time to biopsy of 36 days (95% CI: 12-60 days; p=0.004).

CONCLUSION: Significant diagnostic delay times persist among underserved women with breast abnormalities. While many barriers to care were reported by women, few were associated with a longer time to biopsy. Potential interventions to decrease delay times include alleviating system factors that lead health care facilities to reschedule patient appointments and increasing patient awareness of acceptable evaluation times for breast problems through messaging and education.
End-of-Month Hypoglycemia Admissions are Increased Among Low-Income Patients  Hilary Seligman 1; Ann Bolger 1; Nancy Jianhua Jin 1; Kirsten Bibbins-Domingo1. 1University of California San Francisco, San Francisco, California . (Proposal ID # 9590)

BACKGROUND: Almost one in seven households in the United States is food insecure (at risk of going hungry because of the inability to afford food). Because assistance benefits and paychecks are often distributed on the first of the month, food insecure households often exhaust food budgets before the end of the month. Small studies have suggested that food insecurity is associated with hypoglycemia among patients with diabetes. We hypothesized that the exhaustion of food budgets in low-income households would result in increased hospital admissions for hypoglycemia at the end of the month.

METHODS: We used administrative data on adult discharges from accredited California hospitals between the years 2000 and 2008, available from the California Office of Statewide Health Planning and Development (OSHPD). Data available included diagnosis codes, hospital admission dates, and patient demographics, including home zip code. We examined the admission date of all hospitalizations with a primary discharge diagnosis of hypoglycemia (ICD-9 251.*), and categorized them into quartiles corresponding to the first, second, third, and fourth weeks of the month. We recorded the number of hypoglycemia admissions, and the ratio of hypoglycemia admissions to total hospital admissions. We compared counts and ratios across the first, second, third, and fourth weeks of the month using logistic regression models. We looked for an interaction between week of hypoglycemia admission and patient income estimated using zip-code level data from the US Census Bureau, dichotomized at $30,000. We also looked for week-to-week variation in appendicitis (ICD-9 540.* or 541.*), which we did not expect to be influenced by exhaustion of household food budgets.

RESULTS: A total of 2,558,802 adult hospital admissions occurred in California from 2000-2008, of which 5461 had a primary diagnosis of hypoglycemia. Although there was no significant week-to-week variation in total hypoglycemia admissions (p= 0.5), the association differed by income level (p for interaction = 0.02). Among the 4915 admissions for high-income patients, there was no week-to-week variation in admissions. Among the 544 admissions for low-income patients, the average count of hypoglycemia admissions during the first, second, third, and fourth weeks of the month was 109, 114, 141, and 136 episodes (p= 0.008), representing a 20% increase in hypoglycemia admissions in the last two weeks of the month. Similarly, the ratio of admissions for hypoglycemia increased significantly in the last two weeks of the month among the low-income patients (p=0.008, see Figure), with the last day of the month showing the highest number of hypoglycemia admissions at 27 (range of all days 9-27, mean 18). We observed no week-to-week variation in hospital admissions for appendicitis among high or low income patients.

CONCLUSION: In low-income households, there is a significant increase in hospital admissions for hypoglycemia at the end of the month. Although these data do not allow us to directly link admissions to any single underlying cause, they suggest that hypoglycemia is a critically important safety issue among patients without adequate food access, particularly since the burden of hypoglycemia is likely much larger than reflected in the number of hypoglycemia hospital admissions.
A Randomized Controlled Trial of Peer Mentoring and Financial Incentive to Improve Glucose Control in African American Veterans Judith A. Long 1; Erica Jahnle 2; Diane Richardson 1; Kevin Volpp1.  
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BACKGROUND: Minority populations have disproportionately high rates of Diabetes Mellitus (DM), poor DM control, and the consequences of poor control -- micro-vascular complications. Interventions that improve DM control in minority population have the potential to reduce important health disparities. In this study we conducted a randomized controlled trial to test the effectiveness of peer mentoring and financial incentives in improving glucose control relative to usual care in a population of African American veterans.

METHODS: All participants were African America veterans, with persistently poor DM control (last 2 HbA1c readings > 8%), between the ages of 50 and 70 years. Participants were randomized to one of three arms (usual care, peer mentoring, or financial incentives), with follow-up 6 months after enrollment. Participants had a study HbA1c drawn at enrollment and at follow-up. In addition they were called monthly to assess for hypoglycemic symptoms. Those in the peer mentoring arm were matched to a trained mentor who previously had poor DM control (HbA1c > 8%) but now was in good control (HbA1c < 8%). Mentors were called monthly to reinforce the training and given $20 a month for speaking with their mentee at least four times/month. Participants randomized to the financial incentive arm were told they could earn $100 at six months if their HbA1c dropped by one point and $200 if the HbA1c dropped by two points or to 6.5%. We used an intention to treat analysis and assumed no change from baseline in HbA1c for those lost to follow-up who did not have a current (+/- 1 month) HbA1c in the electronic medical record.

RESULTS: A total of 118 veterans were enrolled and randomized to the 3 arms (39 to usual care, 39 to peer mentoring, and 40 to financial). The mean baseline HbA1c by arm was: usual care 9.9 (SD 1.6), peer mentoring 9.8 (SD 1.8), and financial incentive 9.5 (SD 1.5). The mean baseline HbA1c for peer mentors (based on chart review that made them eligible for the study) was 6.7% (SD 0.6). Follow-up HbA1c was missing for 2 people in the usual care arm, 3 in the peer mentoring arm, and 4 in the financial arm. HbA1c dropped by 0.1% in the control arm, 0.9% in the peer mentoring arm, and 0.3% in the financial incentive arm. After adjusting for baseline HbA1c, the mean change relative to control was -1.02 points (95% CI -1.75 to -0.29) in the peer mentoring arm and -0.53 points (95% CI -1.22 to 0.15) in the financial incentive arm. The intervention was well tolerated. Participants reported <3 minor hypoglycemic symptoms per month 91% of the time (511/563 calls). In addition, there were only two hospitalizations for hypoglycemia (1 in the control arm and 1 in the financial incentive arm).

CONCLUSION: Peer mentors had a strong and statistically significant effect in improving glucose control in a population of veterans with persistently poor DM control whereas financial incentives had only a marginal influence on glucose control. Peer mentors may be a relatively low-cost and culturally sensitive means to improving glucose control and reducing racial disparities in diabetic outcomes.

BACKGROUND: Heart failure (HF) self-care training reduces HF-related hospitalizations and appears to do so more for patients with low literacy. However, the optimal components and structure of the training are not clear. We conducted a multisite randomized trial comparing a literacy sensitive single educational session only (SS-only) with a multi-session “teach to goal” (TTG) educational and self-care support program, and tested whether the effects differed by literacy.

METHODS: We randomized ambulatory patients from 4 academic medical centers who had symptomatic HF (NYHA class II-IV) to: 1) a single session, face-to-face one hour educational session with a health educator and a focused curriculum of key self-care information alone (SS-only); or 2) the same single session plus a multi-session phone-based support (5-8 sessions over the next month and continued calls every 2 to 4 weeks for 12 months) that reinforced learning goals and behaviors (TTG). The education tools and strategy were designed to reduce literacy-related barriers to self-care. We stratified randomization by literacy using the short Test of Functional Health Literacy in Adults with inadequate and marginal defined as low literacy. The primary outcome was combined all-cause hospitalization or death. The secondary outcome was HF-related hospitalization determined by blinded adjudication of medical records. We used negative binominal regression to examine the differences between groups. We adjusted for differences in baseline HF quality-of-life, social status, and use of ACE/ARB, and tested for effect modification by literacy. We present incidence rate ratios (IRR) for all patients and stratified by literacy with IRRs less than 1 favoring TTG.

RESULTS: 605 participants were randomized: 302 SS-only and 303 TTG. Mean age was 61 years; 48% were female; 38% African-American and 16% Latino; 26% had less than a high school education; 69% had ejection fraction less than 0.45; 31% were NYHA class III or IV; and 37% had low literacy. Overall the number of all-cause hospitalizations and deaths and HF-related hospitalizations did not differ between the two groups (SS-only = 224 hospitalizations and 16 deaths, with 87 HF-related; TTG = 244 hospitalizations and 11 deaths, with 83 HF-related) (Table). However, low literacy was a statistically significant effect modifier for HF-related hospitalization (p=0.014), with fewer HF-related hospitalizations observed among those in the TTG group; effect modification by literacy was more modest for the combined incidence of all-cause hospitalization or death (p=0.131).

CONCLUSION: Overall, the multi-session TTG intervention and the SS-only intervention had similar effects on the incidence of all-cause hospitalization and death. However, TTG appeared to be more effective than SS-only in reducing the incidence of HF-related hospitalization for patients with low literacy, but not for those with higher literacy. A single training session may be sufficient for those with higher literacy, but more sustained and intensive support may be required to reduce HF hospitalizations for patients with low literacy.