PS1-11:

Differences in Prescription Adherence vs. Blood Pressure Control: Linking Electronic Health Record and Claims Data

Jove Graham, PhD, *Geisinger Center for Health Research*; Robert D Langer, MD, MPH, *Geisinger Center for Health Research*; Mark G Weiner, MD, *University of Pennsylvania School of Medicine*; Judith E Reardon, BA, *Geisinger Center for Health Research*; Susan Eachus, PhD, *University of Pennsylvania School of Medicine*; Jonathan Cook, BS, *Geisinger Center for Health Research*; Mary Ann Blosky, MS, RN, *Geisinger Center for Health Research*; Craig Roberts, PharmD, MPA, *Pfizer Inc*; Barbara J Turner, MD, *University of Pennsylvania School of Medicine*

Background: Hypertension (HTN) control may be highly dependent on patient behaviors, including filling of antihypertensive medication prescriptions (AHM Rx). We examined electronic health records (EHR) for patients of Geisinger Clinic who had prescription benefits through Geisinger Health Plan. **Methods:** Prescriptions in the EHR were defined as filled if a claim was paid within 90 days. We used logistic regression to test if a patient's filling rate (FR) was associated with gender, age, economic status (measured as median household income by ZIP code) and number of vascular comorbidities (angina, MI, PVD, stroke). We then tested whether a higher categorical FR (0, 1-33, 33-67, 67-99 or 100%) resulted in a greater percent of office visits with blood pressure (BP) controlled to JNC7 standards (%BPs). **Results:** All results are reported as Adjusted Odds Ratios (AOR) [95% CI]. Among 20,161 patients who met JNC7 criteria for HTN and had >3 AHM Rx during plan enrollment from 2002 to 2006, 99% were Caucasian and 53% were female with a mean age of 58.5 years (SD 15.8). Of 191,120 AHM Rx (mean per patient 9.5, SD 6.5), 49%, 59% and 62% were filled within 30, 60 and 90 days. Based on a 90-day FR, 14.7% of patients filled no Rx and 36.2% filled all. Factors negatively associated with FR were female gender (AOR 0.89 [CI 0.870.90]), increasing age (nonlinear, 0.30 [0.290.30] for age 60–80 years vs. age 40–60 years), and number of vascular comorbidities (nonlinear, 0.79 [0.770.81] for 1 vs. 0 comorbidities, 0.66 [0.610.71] for 2 vs. 0 comorbidities). Higher economic status was positively associated with FR (1.05 [1.031.07] per \$10k estimated annual income). In 19,500 patients who had >3 office visits, the mean number of BP readings per patient was 19.6 (SD 10.6), and 60% of readings were under control. After adjusting for the factors above and baseline blood pressures, there was a positive nonlinear association between FR and %BPc (1.08 [1.06–1.13] for 33–67% vs. 0% FR, 1.09 [1.08–1.16] for 67–99% vs. 0% FR, and 1.34 [1.07–1.46] for 100% vs. 0% FR). Results were similar if we excluded patients with 0% FR who may have used alternate insurance for Rx. **Conclusions:** These findings suggest that prescription filling differs by gender, age and comorbidity status and that higher Rx filling rates are associated with better BP control.

PS1-29:

Estimation of Glomerular Filtration Rate and Chronic Kidney Disease Using Area-based Imputed Race Measures

Suma Vupputuri, PhD, *Kaiser Permanente Georgia, The Center for Health Research*; Varun Ashok, MPH, *Kaiser Permanente Georgia, The Center for Health Research*; Peter J Joski, MSPH, *Kaiser Permanente Georgia, The Center for Health Research*; Douglas W Roblin, PhD, *The Center for Health Research, Kaiser Permanente Georgia*

Background: The National Kidney Foundation's Kidney Disease Outcomes Quality Initiative recommends the use of the Modification in Diet and Renal Disease (MDRD) equation to estimate glomerular filtration rate (eGFR) from serum creatinine, age, sex, and race. However, in many managed care organizations (MCOs) race is not routinely collected. The current analysis compares the use of area-based imputed race to actual race in using the MDRD equation to calculate eGFRs and to identify chronic kidney disease (CKD) in MCOs. **Methods:** The study population consisted of 9,196 Kaiser Permanente Georgia members with two eGFR measures <90 ml/min/1.73m² measured 60–365 days apart in 2007 and who had non-missing race. Residential addresses were geo-coded to 2000 U.S. Census block data. The factor of 1.210 for African American (AA) race in the MDRD formula was adjusted according to the proportion of AAs (pAA) in the Census block using the formula: 1+(0.210*pAA). We compared mean eGFR using actual race and area-based race by decile of percent AAs and by CKD stage. A weighted

kappa statistic was calculated to measure the correlation between the two measures of CKD and Bland-Altman plots were constructed to measure agreement. **Results:** By decile of percent AAs in the Census blocks, the differences in mean eGFR estimated using actual race and area-based race were small — ranging from 0 to 1.2 ml/min/1.73m². A trend was observed with greater differences among those living in neighborhoods 20–80% AAs and smaller differences in neighborhoods with <20% or >80% AAs. By CKD stage, the differences in mean eGFR using actual and area-based race were also small — ranging from 0.1 to 0.4 ml/min/1.73m². The weighted kappa statistic for the correlation between CKD stage estimated by actual versus area-based race was 0.88. Bland-Altman analysis indicated that the 95% limits of agreement between the two methods ranged from 14.2 to 12.5; and, plots demonstrated good agreement. **Conclusions:** Imputing race in the MDRD formula using an area-based measure of proportion AA to calculate eGFR results in values that are comparable to eGFR computed from actual race. These results suggest that area-based race from the U.S. Census may be used to overcome limitations of missing actual race for identifying adults with CKD in MCOs.

PS1-31:

Osteonecrosis of the Jaw in Two Dental PBRN Health Plans

Jeffrey L Fellows, PhD, *Kaiser Permanente Center for Health Research*; D Brad Rindal, DDS, *HealthPartners Research Foundation*; Andrei Barasch, DDS, *University of Alabama at Birmingham*; William Rush, PhD, *HealthPartners Research Foundation*; Christina Gullion, PhD, *Kaiser Permanente Center for Health Research*; Daniel Pihlstrom, DDS, *Permanente Dental Associates*; Lisa A Waiwaiole, MS, *Kaiser Permanente Center for Health Research*; Joshua S Richman, PhD, *University of Alabama at Birmingham for the DPBRN Collaborative Group*

Objectives: Osteonecrosis of the jaw (ONJ) has been recently associated with exposure to bisphosphonates (BPs). Incidence and risk factors are ill-defined. This Dental PBRN study (www.dpbrn.org; support: DE-16746, DE-16747) used electronic records from two participating health plans to estimate ONJ incidence and assess whether BP use increased the likelihood of ONJ. **Methods:** We used multiple search strategies and manual chart reviews to identify ONJ cases in members of Kaiser Permanente Northwest and HealthPartners of Minnesota. Our cohort was members age 35 and older with medical and pharmacy coverage for at least one year during 1994–2006. We used a keyword search of electronic physician notes to flag suspected cases among patients with a diagnosis or procedure indicative of ONJ and then confirmed cases through manual chart review. Oral surgeons and general dentists identified additional cases among cohort members. We used logistic regression to estimate the odds of ONJ from BP exposure, adjusting for other risks. **Results:** 37,290 of 572,602 cohort members had a diagnosis or procedure indicating the potential for ONJ. A key word search of physician notes and chart review found 14 ONJ cases; 5 more cases were found through dental providers. Six cases (31.6%) had an oral BP dispense prior to ONJ onset, compared to 21,163 cohort members (3.7%). Eight cases (42.1%) had a history of cancer, and 5 (26.3%) had osteoporosis, compared to 71,776 (12.5%) and 23,392 (4.1%), respectively, among all cohort members. Univariate and multivariate logistic regression were inconclusive due to the small number of confirmed ONJ cases. **Conclusions:** The incidence of ONJ in this cohort was very low and limited our ability to assess risks. When compared to the larger cohort, the higher frequencies of oral BPs, cancer, and osteoporosis among ONJ cases suggest these may be risk factors for ONJ. The low number of cases resulted in logistic regression outcome predictors that were no better than random. The rarity of ONJ cases in our study may be good news for the millions of adults currently taking oral bisphosphonates, although more data are needed before we know for sure.