PS2-39:
Evaluating Prevalence of Pathology Prognostic Indicators in a Cohort of Women Residing in Rural Pennsylvania (PA) Counties

Melissa Stahl BS, *Geisinger Center For Health Research*; Jeffery Prichard DO, MSc, *Geisinger Health System*; Susan Krum MS, CRNP, *Geisinger Health System*; James Evans MD, MPH, *Geisinger Health System*; Azadeh Stark PhD, *Geisinger Center for Health Research*

Mammography utilization gap has been significantly narrowed between urban and rural settings in recent years. Yet, evaluation of breast cancer incidence and mortality data suggest that women residing in rural areas in the US experience a higher incidence of breast cancer and shorter disease free and overall survival regardless of access to health care services. We have implemented a cohort study design to evaluate the pathologic prognostic indicators of breast cancer at the initial presentation of the disease and their association with shorter survival among women in rural PA. We identified women (n=550) diagnosed with their first primary invasive cancer between January 1, 2001 and December 31, 2007 from the Cancer Registry at Geisinger Health System (GHS). Pathologic, clinical and demographic data were retrieved from electronic health records. The mean age at the initial clinical presentation of the disease was 67(± 12.5). The majority, were diagnosed with either stages I and II, 58.6% and 26.8%, respectively. About 6.9% of women were diagnosed with stage III and 7.6% with stages IV. The proportions of women diagnosed with histologic grade 1, 2, and 3 were 31.8%, 41.7% and 26.5%, respectively. Assessment of the joint distribution of estrogen receptor (ER) and progesterone receptor (PR) yielded 58.6% as phenotypic positive for both receptors and, 26.8% as negative. The remaining 16.5% were discordant for the expression of hormone receptors. Sub-typing of breast cancer biomarkers by the three prognostic markers, ER, PR and HER2/neu, yielded 69.7% as hormone receptor positive, epidermal growth factor negative; 7.5% as triple positive; 3.5% as hormone receptor negative, epidermal growth factor positive and 19.3% as triple negative. Preliminary findings from this ongoing research project suggest that the prevalence of triple negative breast cancer is higher in this population. Expression of other markers such as HER1, Viminetin, CK 5/6, P53 and E-Cadherin are also being evaluated.

Cardiovascular Disease

C-D2-01:
Outcomes Associated With Thiazide Combinations for Second-line Treatment of Hypertension in Older Patients

Robert D Langer, MD, MPH, *Geisinger Center for Health Research*; Jove Graham, PhD, *Geisinger Center for Health Research*; Sean Hennessy, PharmD, PhD, *Center for Clinical Epidemiology and Biostatistics, University of Pennsylvania School of Medicine*; Raymond R Townsend, MD, *Renal, Electrolyte, and Hypertension Division, Department of Medicine, University of Pennsylvania School of Medicine*; Frederick Bloom, MD, *Geisinger Clinic*; Valerie Weber, MD, *Geisinger Clinic*

Context: Consensus guidelines recommend thiazides for first-line treatment in uncomplicated hypertension. Most patients require two or more drugs and little is known about the relative efficacy and outcomes of second-line treatments including thiazide. **Objective:** To compare differences in blood pressure, renal function and medical outcomes between commonly used two drug regimens, each including thiazide. **Design:** Retrospective cohort using data from a longitudinal electronic medical record. **Setting:** Large group medical practice. **Patients:** All patients >60 years treated for hypertension between 2001 and 2006. **Main Outcome Measures:** Changes in blood pressure and renal function, incident medical events, and time to failure indicated by an event or regimen change. **Results:** Of 47,419 patients, 6,534 received second-line therapy including thiazide for > 3 months. Thiazides + angiotensin converting enzyme inhibitors (ACE-I), and thiazides + potassium sparing diuretics (PS) were associated with the greatest reductions in systolic pressure, and thiazides + ACE-I with the greatest reductions in diastolic. However, thiazide combinations with PS and ACE-I were associated with the greatest declines in estimated glomerular filtration rate, and these and thiazides + angiotensin receptor blockers (ARB) with increased incidences of renal disease. ACE-I + thiazide were also associated with high incidences of stroke and diabetes. Thiazide + Betablocker (BB) were associated with high rates of cardiovascular disease while thiazide + antiadrenergics (AA) were associated with low event rates overall. Thiazide + Calcium channel blockers (CCB) had no consistent pattern overall, but performed somewhat better in the oldest patients. Thiazides + BB were associated with low composite event rates and the longest time before regimen change. **Conclusions:** The present study suggests disjunction between blood pressure reduction and the events that treatment is intended to prevent. Thiazide with BB was associated with the best composite outcomes, and thiazide with ACE-I with the poorest. These findings must be interpreted with caution because of potential confounding by indication. Exploration in more robust datasets is warranted.

C-D2-02:
Integrating Clinical Trial Findings Into Practice Through Risk Stratification: The Case of Heart Failure Management

David H Smith, RPh, PhD, *Kaiser Permanente Northwest*; Eric S Johnson, PhD, *Kaiser Permanente Northwest*; Micah L Thorp, DO, MPH, *Kaiser Permanente Northwest*; Kathy A Crispell, MD, *Kaiser Permanente Northwest*; Xiuhai Yang, MS, *Kaiser Permanente Northwest*; Amanda F Petrik, MS, *Kaiser Permanente Northwest*

Background: Heart failure case management programs have been shown to be highly effective at preventing future hospitalizations in clinical trials. But these programs absolute benefits depend on the baseline risk of outcome in the treated population. Since baseline risks of hospitalization in trials are often higher than community-based samples, translating trial results to the community setting may be misleading. One solution is to identify subgroups for intervention that have sufficiently high baseline risk. **Objective:** Using estimates of hospitalizations averted from a previously published systematic review of heart failure (HF) management we estimated a program's efficiency based on level of predicted risk. **Methods:** Medical history and demographic data on HF patients from a large integrated US health plan were used to build a prognostic risk-score for cardiovascular-related hospitalization over 1-year. We calculated the crude rate of hospitalizations for comparison with trial data. We also calculated the program's potential dollar savings from averting hospitalizations. **Results:** The average risk for hospitalization in the systematic review's trials was 45%; our population's average observed risk was 18% and the risk among the highest risk patients was 33%. After accounting for the intervention cost, the base-case analysis shows a savings of $122/patient at highest risk. Failing to intervene according to predicted risk (no targeting) would actually cost $211/patient. **Conclusion:** Our findings illustrate how clinical trial findings can be efficiently integrated into community-settings by using a prognostic risk score to focus attention on high-risk subgroups.

C-D2-03:
Effects of Race and Comorbidities on Differences in Blood Pressure Control in Urban and Rural Populations

Robert D Langer, MD, MPH, *Geisinger Center for Health Research*; Jove Graham, PhD, *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*; Mary Ann Blosky, MS, RN, *Geisinger Center for Health Research*; Barbara J Turner, MD, *University of Pennsylvania School of Medicine*

While it is acknowledged that control of blood pressure (BP) in primary care is of major importance in reducing the burden of cardiovascular diseases, control is suboptimal in most populations. Previous work by Turner et al found that the presence of related comorbidities increased the likelihood of a patient's physician addressing hypertension, while unrelated comorbidities competed for attention. We evaluated BP control over a 3 year interval according to JNC-VII guidelines in primary care patients managed in two Pennsylvania health care systems, one urban (Penn = P, n=16,690) and one rural (Geisinger = G, n=79,934). Factors assessed included number of comorbidities (diagnoses occurring >2 times that could compete for clinician attention), number of primary care visits, age, sex, race, insurance and health system. The reduced JNC-VII threshold of 130/80 was applied for diabetes and chronic kidney disease. The G population was more Caucasian (C)(98 vs 49 percent), less African American (AA)(1 vs 46%), marginally older (60.2 vs 59.2 years), and less female (56 vs 61%) than P. Mean months of follow-up