concordance between these scores when both measures could be computed. **Results:** We identified 122,270 eligible patients. Of these, 59.7% (n=73,023) had sufficient data to calculate the lab-based risk score and 88.1% (102,795) clinic-based risk score. Neither score could be calculated for 14.5% (n=17,732). The most common reason for not being able to calculate was missing data on cholesterol. Using the laboratory-based score only, we found 12.9% of the population were at high risk (risk >20%), 24.5% moderate risk (10-20%), and 62.6% low risk (<10%). For those with both risk scores (n=71,280), the lab-based risk score was lower than the clinic-based score for 84.3% of patients (60,060/71,280). The lab-based score was 3.1% lower on average, but the two risk scores were within $\pm 5\%$ for 77.0% of patients (54,874/71,280). The risk scores differed by more than 10% for only 8.7% of patients (n=6236), and in most cases (6098 of 6236), the clinic-based score was higher. **Conclusion:** Electronic data can be used to classify CVD risk for most adults age 30-74. Risk scores based on BMI tend to estimate risk as higher than scores based on laboratory data. However, the risk scores do not differ by more than 5% for most patients.

Keywords: Electronic health records, Cardiovascular disease, Prevention
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C-B4-03:

Promoting Adherence to Improve Effectiveness of Cardiovascular Disease Therapies (PATIENT): Implementing a Medication Adherence Intervention Using Health Information Technology

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Background/Aims: The frequent failure of patients with diabetes and cardiovascular disease to adhere to long-term medications remains one of the greatest challenges for chronic-disease management. Simple interventions designed to make small but significant improvements to adherence at the population-level may offer cost-effective and easily-disseminated options for enhancing adherence. We describe the design and implementation of a pragmatic clinical trial, PATIENT, designed to improve adherence to selected medications with known efficacy for preventing cardiovascular disease morbidity and mortality. **Methods:** We will recruit adults aged 40-80 with diabetes or cardiovascular disease, for whom the use of ACEI/ARBs and statins are recommended therapy for secondary prevention. The 3 arms of the study include 1) usual care; 2) an Interactive Voice Recognition (IVR) intervention, integrated with an electronic medical record (EMR), to educate patients about their medications and assist them in refilling their prescriptions and 3) an Enhanced IVR (IVR+) intervention with EMR-based feedback to primary care providers, mailed educational material to patients, and personalized and tailored mailed reminders to patients who fail to fill prescriptions. The Practical Robust Implementation and Sustainability Model (PRISM) will serve as the guiding framework for evaluating these interventions. The study will take place within the Northwest, Hawaii, and Southeast regions of Kaiser Permanente and will be an illustration of how to conduct a large pragmatic trial in collaboration with care delivery systems. **Results:** As part of the first phase of this 3-year study, key stakeholders and advisors have been actively engaged, including individuals in health IT, care management, pharmacy, and health care providers. Input is being obtained through ongoing meetings with local advisory boards and a series of patient focus groups and in-depth, individual interviews with patients, providers, and health plan managers. The presentation will describe the finalized design of the intervention and highlight the findings from the ongoing developmental work. **Conclusions:** The PATIENT study interventions, if successful, could have significant public health applications as flexible and generalizable components of managed care and pharmacy benefits programs. Understanding

systems-level and patient-level barriers to, and facilitators of, successful implementation is therefore critical to widespread implementation and development of these interventions.

Keywords: Cardiovascular, IVR, Implementation
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PS2-42:

Outcomes of Cardiovascular Events in Two Systems of Care

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Objectives: Understanding the prevalence and outcomes of cardiovascular disease across different health systems will enable organizations to effectively use clinical datasets to monitor and improve the care delivered to their patients. Framed within the context of comparative effectiveness research, this study utilized comprehensive administrative datasets to describe outcomes of hospital readmission, Emergency Department (ED) use, and mortality following a cardiovascular event (myocardial infarct, congestive heart failure, angina, stroke). We examined patients within the same geographic region (central Texas) at Scott & White Healthcare (SWHP) and the Veterans Health Administration (VA). **Methods:** Patients with a recorded cardiovascular event in 2009 were identified by ICD9 codes from the Virtual Data Warehouse (VDW) for SWHP patients and VA databases for veterans. Subsequent hospital readmission for any reason, 30-day mortality (all cause), and ED use were defined by dates of care, treatment location, and death data maintained by both systems. Covariates included age, gender, poverty status (non-payment for SWHP, high priority veterans), prior-year history of cardiac event, and Charlson comorbidity score. **Results:** Excluding 7 pediatric cases, 1,156 SWHP patients met inclusion criteria versus 406 VA cardiovascular event patients. Veterans were predominantly male (96%), aged 68.6 years (+/-11.2), of whom 14% died as inpatients. SWHP patients averaged 71.9 years (+/-14.6), with slightly over half being female. In addition to gender, VA patients also experienced greater overall comorbidity scores. Unadjusted models indicated that mortality and readmission rates were lower for SWHP patients relative to veterans; documented ED use was minimal in both systems. Ongoing analyses will examine specific gender and other patient characteristic differences by event type and clinical outcome. **Conclusions:** In the same geographic region, these comparative analyses were enabled by Scott & White's participation in the VDW coupled with access to VA national administrative databases. While the two populations have well-recognized demographic and clinical differences (e.g., SWHP pediatric patients with their unique pathology, VA military service conditions), the similar richness of diagnosis codes, treatment dates, and healthcare-related outcomes will permit sophisticated adjusted analyses. Findings highlight VDW research benefits and the potential for dual system analysis, increasing priorities for these large health organizations.

Keywords: Cardiovascular events, Comparative research, Veterans
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PS2-14:

Self-Reported Use of Home Blood Pressure Monitoring Does Not Predict Improved Hypertension Control

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Background/Aims: Randomized controlled trials provide evidence that home blood pressure monitoring (HBPM) leads to small but significant decreases in blood pressure (BP) in patients with hypertension (HTN). Less is known about use of HBPM in the general population with HTN and its effect on BP control. **Methods:** From May 2006 to December 2007 we attempted to contact all patients with a diagnosis of HTN from 10 primary care clinics in Western Washington (Group Health) to determine their eligibility and willingness to participate in a the Electronic Communications

and Home Blood Pressure Monitoring Trial (e-BP). Patients were asked whether they took their BP at home. Patients with essential HTN willing to participate were invited to 2 screening visits to determine if they had uncontrolled BP and eligible for study participation. We describe here the relationship between HBPM and willingness to attend a screening visit, and for those who had a screening visit whether prior use of HBPM predicted BP control. **Results:** Of the 9298 patients sampled, 8840 (95.1%) were contacted, and 7268 (82.2% of contacted) answered the HBPM question, with 60.8% stating they used a HBPM. After excluding 2684 participants who did not meet study eligibility criteria, patients who were eligible but who refused to attend a screening visit (n=2,078) were more likely to use HBPM than those willing to attend the screening visit (n=2,506) (67.9% vs. 57.9%, $P<.001$). Among patients with a BP measure at the first screening visit, those who reported using HBPM trended toward improved BP control (BP <140/90 mm Hg) compared to patients not using HBPM, however this was relationship was not statistically significant (53.2% vs. 50.5%, $p=0.18$). **Discussion:** Hypertensive patients who were not willing to participate in a study to use HBPM and Web communications to improve BP control were more likely to already use HBPM. Prior use of HBPM trended towards improved BP control, but not significantly. HBPM use by itself does not predict HTN control, possibly because people may use these for different reasons.

Keywords: Home blood pressure monitoring, Hypertension, Prevention and control

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C-A4-03:

Medication Adherence in Patients with Uncontrolled Blood Pressure: Results from the Hyperlink Study

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Background/Aims: The Hyperlink study is a cluster randomized trial in patients with uncontrolled blood pressure. The objectives of this analysis were: (a) to compare measures of self reported adherence with actual adherence to medications at study enrollment (b) to study predictors of adherence. **Methods:** We analyzed prescription claims data for 146 participants who had prescription coverage through HealthPartners for at least one year prior to study enrollment and were taking at least 1 antihypertensive medication. Self reported adherence was measured using a 4-item Morisky scale. Actual adherence was defined as a continuous measure of Medication Possession Ratio (MPR) as well as a binary measure defining adherence as an MPR of >80%. **Results:** Of the 146 study participants, mean age was 66 (37-89 years), 14% were non-white, 48% were females, 45% had a 4yr college degree. Mean MPR was 0.86, 71% of patients were adherent by the binary MPR measure, and 70% self-reported high adherence (Morisky score=0). Higher self-reported adherence (lower Morisky score) was significantly associated with higher MPR (Pearson $r=-0.4$; $p<0.001$). Results of multiple linear regression showed that higher age ($p=.04$) and higher number of medications ($p=0.04$) predicted higher mean MPR. Race, gender and education were not associated with MPR. Higher self-reported adherence was associated with higher age but not race, gender, education, or number of medications. **Conclusions:** Self reported adherence was correlated with actual adherence in this sample of patients with uncontrolled blood pressure. Age and number of medications were important predictors of adherence. Our finding that patients on multiple drugs tend to be more adherent differs from many other studies, and may be related to the study population being sufficiently motivated to volunteer for a trial.

Keywords: Adherence, Hypertension, Medication

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PS2-07:

The Association of Cyberbullying with Cardiovascular Health in Adolescents: A Preliminary Analysis

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Background/Aims: With increasing access to the internet and other technology, adolescents may become victims of online harassment, referred to as cyberbullying. Cyberbullying may cause worry, fear, and distress among youth, all which increase cardiovascular disease (CVD) risk in adults. To our knowledge, no study has examined the potential association of cyberbullying with CVD risk factors in adolescents. We examined the association of cyberbullying with overweight/obesity and elevated blood pressure (BP) among healthy adolescents. **Methods:** Adolescents age 14-17 years and parent/guardian were invited to a research visit between November, 2009 and present. Height, weight, and BP were measured by trained staff and internet experiences quantified by questionnaire. Race was defined as African-American or other race. Cyberbullying was defined as self-report in the past year of being worried or threatened because of being bothered or harassed online or of being embarrassed by others online. Overweight/obesity was defined as BMI ≥ 85 th percentile for gender and age. Elevated BP was defined as a SBP or DBP ≥ 90 th percentile for gender, age and height. Logistic regression models were fit to estimate the association of cyberbullying with overweight/obesity or elevated BP. **Results:** As of October, 2010, 190 adolescents with complete data have been recruited into the study. Mean age was 16.5 $\pm$ 1.0 years; 76 (40%) were male and 112 (59.0%) were African-American. Mean BMI of adolescents was 24.2 $\pm$ 6.4 kg/m² and mean SBP and DBP were 117.7 $\pm$ 11.3 mmHg and 63.9 $\pm$ 7.1mmHg, respectively; 62 (32.6%) were classified as overweight/obese and 28 (14.7%) had an elevated BP. A total of 29 (15.3%) adolescents reported being cyberbullied; older adolescents ($P=0.061$) were more likely and African-Americans ($P=0.040$) were less likely to report being cyberbullied. Gender was not associated with cyberbullying ($P=0.143$). Cyberbullying was not associated with overweight/obesity ($P=0.951$) or elevated BP ($P=0.701$), after adjustment for other risk factors. **Conclusions:** CVD risk factors in youth track into adulthood, thus early-life experiences represent important and potentially modifiable predictors of adult disease. In this study, self-reported experiences of cyberbullying were not associated with being overweight/obese or with elevated BP. Continued study of psychosocial risk factors, including cyberbullying, with adolescent CVD health is warranted.

Keywords: Cyberbullying, Adolescent, Cardiovascular

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Child Health

C-B5-04:

Patterns of Blood Pressure Measurement at Pediatric Primary Care Visits in Large Medical Group Practices

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Background/Aims: Current estimates suggest that high blood pressure is present in 3-5% of children, although the prevalence of hypertension in obese children may be as high as 20%. The American Academy of Pediatrics recommends routine blood pressure measurement in children over the age of 3. However, it is not known whether this recommendation is being followed or what factors influence blood pressure measurement in pediatric populations. **Methods:** We examined 115,695 pediatric patients ages 3-17 who had an outpatient primary care visit (family practice or pediatrics) between 2007 and 2009 in two large medical groups in Minnesota and Colorado. Patient characteristics (sex, age, BMI percentile, and race/ethnicity), and clinic department were extracted from electronic medical record data. The predicted probability of blood pressure measurement was estimated using binomial mixed-model logistic regression with maximum likelihood estimation