parametric and non-parametric statistics. **Results:** Preliminary finding suggest, that while slightly more than half of our study population received chemotherapy, the proportions varied by stage and age, with younger patients (<65) and those diagnosed at a lower stage (lllb) were significantly more likely to receive treatment. The most common first line treatment was Carboplatin and paclitaxel. However, with the introduction of taxenes, monoclonal antibodies, antimetabolites, and targeted agents in the later years of the study period, the distribution of first line therapy changed significantly overtime. **Conclusions:** The findings from this analysis could have significant clinical and policy relevance given that NSCLC is the number one cause of cancer death. Future analyses will compare the variation in treatment patterns overtime for CRN enrollees as compared to SEER-Medicare, NCCN data and ASCO guidelines.

Keywords: Lung cancer, Chemotherapy, Patterns of care
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C-B2-02:
Epidemiology of Tamoxifen and Thromboembolism

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Background/Aims: Tamoxifen is a widely prescribed endocrine therapy for prevention and treatment of breast cancer in pre- and post-menopausal women and is commonly recommended for five years duration. While most people tolerate tamoxifen reasonably well, thromboembolic events such as deep vein thrombosis, pulmonary embolism, myocardial infarction or cerebrovascular accident can be serious complications. Study aims include evaluation of epidemiology of tamoxifen-related thromboembolic event in a large community setting, determination of rate and temporal distribution of thromboembolic events, description of patient clinical characteristics, analysis of time from tamoxifen initiation to first thromboembolic event, description of incidence of events among subgroups of patients related to antiplatelet, anticoagulant and statin medication use. **Methods:** Retrospective electronic extraction of tamoxifen-use patient data from Marshfield Clinic/ St. Joseph's Cancer Registry and the Marshfield Clinic Electronic Medical Record (EMR) from 1/1/1992 - 6/31/2009, with manual data validation. Medication use was identified by MedsManager and by Freepharma™. Thromboemoblic events and comorbidity diagnoses were identified by ICD9 codes, and cancer diagnosis by ICD9 code or inclusion in the Registry. Analysis included descriptive statistics, Kaplan-Meier estimates of event-free survival over time and estimates of event rates and hazard ratios. Risk factors were assessed in univariate and multivariate analyses. **Results:** Primary analysis was limited to 3283 women with breast cancer. Mean age at first tamoxifen use was 62.1 years (range 22 – 97). Tamoxifen adherence rates (censored for death or 18 months after last visit) showed 88.6% of women on tamoxifen at year one, 78.1% at year 2, 67.4% at year 3 and 56.9% at year 4. Thromboembolic events (venous and arterial) occurred in 5% of women under age 45, 7% of women age 45-54, 14% in women age 55-64, 19% in women age 65-74 and 27% in women older than 75 years. Thromboembolism continued to occur over time, unlike other studies that reported clustering of thromboembolism in the first year. **Conclusions:** Tamoxifen use should be recommended with caution, and patients monitored closely over the entire period of tamoxifen use for development or prevention of thromboembolic events. Further investigation into tamoxifen discontinuation rates is warranted.

Keywords: Tamoxifen, Thromboembolism, Breast cancer
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PS2-29:
KRAS Testing in Metastatic Colorectal Cancer: The CERGEN-C Comparative Effectiveness Study

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Genetic testing to inform health professionals and patients of disease risk, diagnostic, prognostic, or treatment information such as KRAS mutation testing to determine colorectal cancer (CRC) treatment is an evolving health care approach. KRAS, a pharmacogenomic marker normally expressed in wild type form, confers a lack of response to epidermal growth factor receptor (EGFR) inhibitor treatment in metastatic CRC when mutated. Mutations occur in 30-50% of CRC cases and a gap in knowledge exists regarding the impact of KRAS testing on treatment outcomes in metastatic CRC. The CERGEN-C (Comparative Effectiveness Research in Genomics & Personalized Medicine for Colorectal Cancer) study is a collaboration of eight Cancer Research Network members and four academic partners evaluating connections between evidence synthesis and evidence generation in cancer-related genomics and personalized medicine. We are conducting a comparative effectiveness study to evaluate overall survival in patients who received KRAS testing during routine medical care compared to those who did not before and after recommendations for KRAS testing were published in mid-2008. We identified 800 members from seven integrated health care organizations diagnosed with stage III (n=200) or IV (n=600) colorectal cancer from 1/1/05-7/31/2010. To date, 293 charts have been reviewed, 224 (76%) from pre-KRAS testing recommendations (pre-) and 69 (24%) from post-KRAS testing (post-) recommendations. All cases were Stage IV and the majority of cases were Caucasian, 133 (61%) pre and 51 (76%) post. A family history of any cancer was identified in 97 (43%) pre- and 29 (42%) post- cases and KRAS testing was performed in 60/293 (20%) of cases reviewed to date, 41 (18%) pre- and 19(26%) post-, respectively. Wild type KRAS was found in 28 tested cases, 21 pre- and 7 post- cases. Of the identified wild type cases, 17 pre- and 6 post- were treated with EGFR inhibitors. Overall, EGFR inhibitors were administered in 48 cases, 42 (18%) pre- and 6 (19%) post-. EGFR inhibitor treatment began with 3rd line therapy in those tested for KRAS compared to first line in those not tested. The most common chemotherapy regimen including an EGFR inhibitor was irinotecan and cetuximab, n=25 (52%).

Keywords: KRAS, Metastatic colorectal cancer, CERGEN
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Cardiovascular Disease

C-A4-01:
Primary Non-Adherence to Statin Therapy in an Integrated Delivery System: Patients' Perceptions

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Background/Aims: Statin medications are commonly prescribed to lower cholesterol and the risk for cardiovascular events. Few published studies have, however, explored factors that may contribute to primary non-adherence with statins. We aimed to determine patients' reasons for non-adherence with newly prescribed statin medication. **Methods:** We identified Kaiser Permanente (KP) Southern California members aged =24 years with a new order for a statin prescription between May 10 and June 5, 2010 not redeemed within five weeks of the order date and with 12 months of continuous membership prior to the statin order. New orders were defined as the patient having no statin prescriptions in the previous 12 months. Among 1,157 eligible patients indicating English as their preferred language, we randomly selected patients and conducted 98 semi-structured telephone interviews about factors and perceptions that contribute to non-adherence. **Results:** At six weeks post-index prescription date, 73% of respondents (74/98) reported not filling their new statin prescription while 23% (21/98) picked it up from a non-KP pharmacy. The three most commonly cited reasons for primary non-adherence were general concerns about taking the medication (63%; 46/73), a decision to try lifestyle modifications instead of taking the medication (63%; 46/73), and fear of side effects (53%; 39/73). One-third of respondents (33%; 24/72) reported taking over-the-counter products to lower their cholesterol. The majority of respondents agreed with the importance of the medication (63%; 45/73) but worried that the prescription would cause more harm than good (62%; 46/73). Fewer respondents (22%; 16/74) were burdened by the out-of-pocket expenses for the medication. **Conclusions:** Although most respondents were convinced of the importance of their newly prescribed statin medication, they expressed

concerns about adverse effects. In addition, respondents expressed a desire to modify their diet and exercise, and/or take non-prescription products to lower their cholesterol. These findings are consistent with other studies that have assessed patient factors related to adherence with statin therapy. These data warrant the need for interventions that address patients' negative perceptions of statins while emphasizing the benefits of statins for reducing cardiovascular morbidity and mortality.

Keywords: Adherence, Statins

doi:10.3121/cmr.2011.1020.c-a4-01

PS2-15:

Linking Disparate Data Sources to Evaluate Implantable Cardioverter Defibrillator Outcomes in the Cardiovascular Research Network: Initial Lessons

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Background/Aims: Implantable cardioverter defibrillators (ICDs) result in striking mortality benefits among randomized trial populations, but elucidation of outcomes in real-world populations is needed to optimize care and coverage decisions. The Cardiovascular Research Network (CVRN) Longitudinal ICD Study is a new 7-site 3.5-year project evaluating the rate of appropriate device therapies, device complications, hospitalization, mortality, and utilization/cost among a cohort of primary prevention ICD patients. **Methods:** This project links baseline data from the National Cardiovascular Data Registry (NCDR) for ICDs, the virtual data warehouses (VDW) of participating CVRN sites, and novel collection of post-implant ICD device activity from CVRN care delivery systems. NCDR ICD data from 14 implanting hospitals from 2006-2009 were matched to health plan membership and uploaded to the study following necessary approvals. VDW tables have been constructed at the CVRN sites to capture longitudinal clinical and administrative detail. Forms and procedures for abstracting ICD device interrogations and treated arrhythmic episodes have been pilot tested, and procedures have been established both for central review of source documentation and adjudication by an external panel of expert electrophysiologists. **Results:** A cohort of 2500 primary prevention ICD recipients has been assembled. The pilot study evaluated collection and review of device interrogations and treated arrhythmic episodes among a sample of 43 subjects. Lessons from the first study year include: 1) the need to allow additional time and effort to establish/modify contractual agreements between external partners; 2) the benefits of support from an engaged group of stakeholders; 3) the substantial differences across and within study sites as to how ICD device interrogation records are archived and tracked, with local data sources including centralized medical records, stand alone pacemaker/ICD clinic files, electronic interrogation archives, and remote interrogation websites; and, 4) the importance of caution when planning for the review and adjudication of real world medical record data based on published approaches from prospective trials. **Conclusions:** Following establishment of the study cohort and piloting abstraction/adjudication procedures, the data collection phase is underway. Further lessons from initial abstraction will be available at the time of the HMORN conference. The study period ends March 2013.

Keywords: Implantable cardioverter defibrillators, Outcomes

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PS2-34:

Patterns of Complex Comorbidity in Older Patients with Heart Failure

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Background: The presence of multiple comorbidities in an elderly patient can make clinical decision-making and disease management challenging, and may increase the risk for adverse outcomes including unnecessary hospitalizations, adverse drug events, and functional decline. Approximately one half of patients with HF have at least one additional comorbid condition present. Despite the increasing prevalence of multiple comorbidities in patients with HF, data are lacking on whether various comorbidities of HF cluster together, and whether certain clusters of comorbidities are associated with adverse clinical outcomes in these high risk patients. **Methods:** The study population includes 37,823 patients in the CVRN PRESERVE cohort, a multicenter cohort of patients with HF diagnosed between 2005 and 2008, that is currently being conducted at 4 CVRN sites: Kaiser Permanente of Northern California, Kaiser Permanente Colorado, Kaiser Permanente Northwest and Fallon Community Health Plan/Meyers. Approximately 46% of the cohort is female and 78% are >65 years old. **Results:** The prevalence of specific comorbidities range from low [e.g., ischemic stroke, 5.3% (2,004 of 37,823); TIA, 4.0% (1,500 of 37,823)] to moderate or high [e.g., cognitive impairment/dementia, 12.4% (4,678 of 37,823); hypertension, 48.4% (18,311 of 37,823)]. We will characterize the patterns of comorbidity using cluster analysis. Cluster analysis is a novel approach to examining the co-occurrence of multiple comorbidities that goes beyond traditional indices, such as the Charlson and Elixhauser, that simply count diseases. Examples of clusters that may be present in patients with HF are: cardiopulmonary (e.g., coronary heart disease, COPD), circulatory (e.g., hypertension, atrial fibrillation), sensory-motor (deafness and visual impairment) and neurological (e.g., dementia, depression). We will describe the demographic characteristics of high frequency clusters and examine whether patterns of comorbidity vary according to whether HF is with or without preserved left ventricular systolic function. **Conclusions:** Future work in this cohort will examine the association between patterns of comorbidity clusters and use of selected HF-related therapies, early physician follow-up among those hospitalized for HF, and rehospitalization in the 1- and 6-month periods after hospital discharge.

Keywords: Heart failure, Epidemiology

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C-A4-02:

Electronic Health Record-Based Cardiovascular Risk Assessment and the Use of BMI When Laboratory Data is Not Available

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Background/Aims: Multivariate cardiovascular disease (CVD) risk calculators, such as the Framingham risk equations can be used to identify populations most likely to benefit from treatments to decrease risk. We wanted to determine what proportion of adults in a large integrated health plan had sufficient automated laboratory data to calculate risk and when insufficient laboratory data was available whether BMI could be used. **Methods:** The setting was 26 primary care clinics in Washington (Group Health). We used automated databases to identify patients' age 30-74 with at least 2 years continuous enrollment prior to April 1, 2010 and no CVD. The goal was to define two different Framingham risk scores using only automated data; one based on lipids (laboratory-based), and one based on BMI (clinic-based). We describe the proportion of patients for whom we were able to calculate risk, the data missing when we could not, and the