database of genome-wide genotypes, telomere length, and rich environmental and clinical data on a diverse cohort of 100,000 adults constitutes an unprecedented resource for research on genetic and environmental determinants of aging-related diseases, response to treatment, healthy aging and longevity. The RPGEH has developed collaboration and access procedures to facilitate sharing of these data. The development of this resource shows the potential for collaborative research in a large integrated health services delivery organization with a comprehensive EHR, linked biospecimens and environmental exposure data.

Keywords: Biobank, Genetics

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C-A3-01:

Current Use of KRAS Testing in Clinical Practice

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Background/Aims: Provisional clinical guidelines, published by the American Society of Clinical Oncology in 2009, recommend that patients with metastatic colon cancer (mCRC) be tested for mutations in the Kirsten ras (KRAS) oncogene, and that patients found to have the non mutated KRAS gene be offered anti-epidermal growth factor receptor (EGFR) antibody therapy. Such therapy has been shown to extend life; yet it is also expensive and frequently associated with severe side-effects. Currently, little is known about how clinicians are using KRAS testing in clinical practice. This study compares the adoption of policies for and usage of KRAS testing and anti-EGFR therapy in clinical practice among seven integrated health delivery systems. The purposes were to examine 1) physicians' attitudes toward and experiences with KRAS testing and the communication process with their patients, 2) patients' experiences with KRAS testing and anti-EGFR therapy and associated quality-of-life issues, and 3) the adoption of policies for KRAS testing and anti-EGFR therapy at the different health plans. **Methods:** Data collection includes 1) semi-structured interviews with 33 oncologists at the participating HMORN sites, one leader at each site, and 20 mCRC patients in KPNC, and 2) collection of policy documents from each site. Coding is conducted through an iterative process by three social scientists. **Results:** To date, twenty-eight 15-30 minute physician interviews have been conducted; coding and data analysis has begun. For this meeting, we will focus on the range of practices among the physicians, specifically addressing following questions: 1) To what extent have oncologists adopted the KRAS test? 2) At what point in the clinical process do they test for KRAS? 3) What concerns regarding the KRAS test do they articulate? 4) To what extent do costs (of the test, of treatment) feature into their treatment decisions? 5) How do oncologists incorporate patients into the treatment decision making process? 6) To what extent are these physicians adhering to guidelines for KRAS testing vs. considering the specifics of each case in their treatment plan? **Conclusions:** We expect that the results will shed light on how recommendations for KRAS testing are translated into clinical practice.

Keywords: Use of genetic tests, Qualitative methods

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PS1-14:

Recent Trends in Induction of Labor

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Background: Induction of labor is a common obstetric procedure associated with an increased risk of adverse outcomes. The purpose of this study is to describe maternal characteristics and recent trends in induction of labor based on maternal age and race/ethnicity. **Methods:** We used the Matched Perinatal Service System (PSS) and Hospital Inpatient records of women delivering in KPSC hospitals between1997-2008 (n=289,576). The PSS database includes all births in KPSC hospitals, ICD-9-CM codes from hospitalization in all KPSC hospitals, and infant birth certificate records. Pregnancies were identified using PSS; maternal and infant characteristics were obtained from the birth certificate, and maternal and infant outcomes were obtained from ICD-9-CM codes. Indication for induction of labor was determined using ICD-9-CM procedure codes (73x) and subjects were grouped into spontaneous labor, clinically indicated, and elective (inductions for which no medical or obstetrical indications was documented) induction groups. We compared event rates in the earliest (1997-1998) versus recent (2007-2008) periods. **Results:** The elective induction rates increased from 5.4% (2,888 of 53,600) in 1997-1998 to 9.9% (4,384 of 44,094) in 2007-2008 ($p<.001$). The indicated induction rates increased from 3.4% (1,813 of 53,600) in 1997-1998 to 5.7% (2,523 of 44,094) in 2007-2008 ($p<.001$). Electively-induced women were more likely to be white, educated, to have initiated prenatal care early in the pregnancy, and smoked during pregnancy compared with those with spontaneous onset of labor. From 1997-1998 to 2007-2008, elective induction rate increased among whites (7.6% [1,177 of 15,506] to 13.2% [1,298 of 9,845], respectively; $p<.001$), Hispanics (4.9% [1,207 of 24,898] to 9.4% [2,271 of 24,249], respectively; $p<.001$), and Asian/Pacific-Islanders (3.9% [195 of 4,968] to 6.2% [322 of 5,196], respectively; $p<.001$). African-Americans had the largest relative increase (4.8% [260 of 5,430] to 10.3% [396 to 3,843], respectively; $p<.001$). The increases in the rate of elective and indicated inductions were similar according to maternal age categories. **Conclusions:** Our findings indicate elective induction of labor is rising faster than the rate of indicated induction of labor. The increase in elective induction rate is disconcerting; largely because of the known increased risk this patient population has for adverse perinatal outcome.

Keywords: Induction of labor, Elective induction, Indicated induction

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Pharmacoepidemiology

PS1-40:

Laboratory Monitoring of HEDIS Medications in the Ambulatory Setting: The Relative Contribution of Physician and Patient Behavior to Undermonitoring

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Background/Aims: Initiative to improve the quality and safety of pharmaceutical care have lead to the development of quality of care measures including standards for the appropriate monitoring of high-risk medications (defined as medications commonly implicated in adverse drug events or with narrow therapeutic window). While low rates of laboratory monitoring of high-risk medications might indicate poor physician performance, it is unclear how much patient non-adherence to physician-ordered tests contribute to undermeasruement of physician quality. The study aim is to determine, for Health Employer Data Information Set (HEDIS) quality of care, high-risk medication laboratory monitoring measures: 1) the prevalence of completion of recommended monitoring tests; and 2) the proportion of incomplete testing attributable to lack of clinician test ordering relative to patient non-adherence to ordered tests. **Methods and Results:** We measured the ordering and completion of laboratory tests for HEDIS-based high-risk medications (ACE inhibitors, ARBs, digoxin and diuretics, and anticonvulsants) in a large multispecialty group practice between January 1, 2008 and July 31, 2008. Laboratory test completion for HEDIS cardiovascular drugs was higher than for anticonvulsants. Each cardiovascular drug had a completion rate of

> 85%, while the completion rate for anticonvulsants ranged from 30-75%. The lowest test completion rate was for phenobarbital levels to monitor phenobarbital (30%). For all cardiovascular and anticonvulsant drugs, the proportion of recommended tests not ordered by the clinician ranged from 5% to 60%. The lowest test order prevalence was for phenobarbital level for phenobarbital use (35%), followed by valproic acid level for valproate use(48%), and carbamazepine level for carbamazepine use (60%). Rates of patient noncompletion of ordered tests for all drugs was generally <10%. **Conclusion:** Completion of laboratory monitoring tests for high-risk cardiovascular medications was higher than for high-risk anticonvulsants according to HEDIS guidelines. Clinician ordering behavior exhibited more variation than patient adherence to test orders. Underestimation of HEDIS quality of care monitoring due to patient non-adherence is minimal for cardiovascular medications, but higher for anticonvulsants.

Keywords: Pharmacology, Epidemiology, Adherence

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C-C5-04:

Can Claims Data Accurately Identify Graft Type and Infections Following Anterior Cruciate Ligament Repairs?

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Background: The frequency of human tissue allograft contamination leading to infection is unknown. Attributing infections to allograft contamination versus surgical factors is elusive. National claims data may facilitate study of allograft-associated infections but first require accurate algorithms to identify implantations and infections. We explored the feasibility of using claims data to identify anterior cruciate ligament (ACL) allograft implants and infections. **Methods:** We selected candidate diagnosis, procedure, visit type, and antibiotic prescription criteria to identify ACL allograft repairs and infections. Candidate criteria were categorized by likelihood of infection and putative pathogen type. Criteria were then applied to HMO Research Network Virtual Data Warehouse files for 2000-2008 from six sites. We defined the infection risk period as 90 days following ACL repair. We reviewed charts flagged by each criterion to determine implant type and to assess for infection. Sensitivity and positive predictive values (PPV) were calculated. **Results:** Preliminary results are available from five of six sites. Procedure codes 29888 and 81.45 (ACL repair, unspecified) flagged 11,202 episodes of care. Diagnosis codes compatible with infection flagged 139 episodes (1.2%) of which 71 were categorized as high probability (0.63%). Microbiology and infection management procedure codes flagged 1,029 episodes (9.2%) and 68 episodes (0.6%) respectively. Antibiotics were prescribed for 1,523 episodes (14%) of which 580 were deemed high likelihood prescriptions (5.2%). There were 1011 hospitalizations within 90 days of ACL implantation (9.0%), 787 emergency department visits (7.0%), and 43 infectious disease specialist visits (0.4%). Over 1500 chart reviews are planned of which 107 have been completed thus far. The PPV for allograft implantation is 33% (95% CI 25-43%). Sufficient data are currently available to confirm 14 infections. Antibiotic prescribing was the most sensitive criterion while infectious disease visit had the highest PPV (sensitivities 86% and 7%, PPVs 35% and 100% respectively). **Conclusions:** Claims data do not discriminate between allografts and autografts in ACL repair but do identify a subset of patients with possible infections. Once chart reviews are complete we will assess whether combinations of criteria can increase accuracy.

Keywords: Allograft, Infection, Epidemiology

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C-A4-05:

Design for Identification, Retrieval and Adjudication of Acute Myocardial Infarction Cases in the Mini-Sentinel Distributed Database

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Background/Aims: The goal of the FDA's Mini-Sentinel pilot is to inform development of an active safety surveillance system, the Sentinel System, for monitoring medical product safety. Mini-Sentinel is a collaborative endeavor by Data and Academic Partners including the HMORN and Kaiser, designed to evaluate barriers to the creation of this surveillance system. Orchestrated via the Mini-Sentinel Coordinating Center (MSCC), the Acute Myocardial Infarction (AMI) Validation project is a test case for medical outcome validation within a distributed system designed for medical product safety surveillance. **Methods:** A 3-component process for validation of medical outcomes was used : (1) Case definition and identification: Development of a clinical definition of AMI, an algorithm for identifying likely AMI from Mini-Sentinel Distributed Databases (ICD-9 code-based) and a sampling strategy to select approximately 100 likely AMI cases for chart retrieval; (2) Chart retrieval: Agreement between the MSCC and Data Partners regarding: (a) amount of de-identified medical information to be extracted ; (b) mode of data transfer to the MSCC; and (c) approach to maintaining the privacy and security of protected health information; (3) Abstraction and Adjudication: creation of (a) abstraction forms for use by trained nurse abstractors; and (b) an adjudication process for cardiologist reviewers. **Results:** Challenges encountered to date include: (1) the number of participating Mini-Sentinel Data Partners; (2) decision-making surrounding centralized vs. decentralized abstraction; and (3) concerns over privacy of transmitted health information and medical record de-identification for centralized review. Ultimately, concern over quality and variability of abstraction at the Data Partners' sites, together with small numbers of charts requested from each Data Partner, led to selection of a centralized abstraction process. Procedures needed to be established for this novel activity that addressed how to proceed with this project as a public health activity exempt from IRB review. **Conclusions:** The Sentinel System can yield timely data for active surveillance of medical product safety, and may be useful for other purposes, including research and quality improvement. Ongoing challenges include ensuring the minimum necessary amount of data is transmitted from Data Partners for centralized chart review and adhering to established procedures to maintain data security.

Keywords: Safety surveillance, Acute myocardial infarction, Validation project

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PS1-29:

Preparing for Genetics Research on Serious Skin Rash in the HMO Research Network

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Background/Aims: Stevens-Johnson syndrome (SJS) and toxic epidermal necrolyssis (TEN) are life-threatening widespread serious skin rashes (SSR), often accompanied by extensive epidermal detachment and/or mucous membrane involvement. Recent genetic studies have shown a strong link in Han Chinese between HLA-B*1502 and risk for SJS with use of Carbamazepine; however, more research is needed to identify similar markers among other ethnic groups. With support from The International Serious Adverse Event Consortium, we evaluated the potential for using electronic clinical and administrative data from Kaiser Permanente Hawaii and Kaiser Permanente Georgia to identify provisional SSR cases. **Methods:** We searched inpatient encounters, problem lists and allergy tables for codes