assurance work, but disenrollment by member characteristics has been incompletely characterized. This information is important in longitudinal outcomes research. **Aim:** To calculate member disenrollment across HMORN sites by age, gender, and selected disease states. **Methods:** Baseline membership cohorts were identified for 8 consecutive years (2000-2007) at 9 HMORN sites. Members were included in a baseline cohort year if they were enrolled for at least 305 days in that year. Disenrollment, defined as having fewer than 305 days of membership in a year, was assessed at 1, 3, and 5 years for each cohort. Members who died before the end of each assessment period were censored. Comorbidity was assigned based on ICD9 diagnosis code(s) for diabetes, asthma, heart failure, hypertension, hyperlipidemia or depression over a three-year period ending with the end of the cohort baseline year. SAS code was prepared at one site for distribution to other sites to run against VDW tables. **Results:** While overall disenrollment varied across the participating sites, within-site disenrollment changed little from year to year. In general, 1-year disenrollment rates varied from 7% to > 22%; 5-year disenrollment rates ranged from < 30% to > 60%. Using one site as an example, peak 1-year disenrollment was seen among the 20-29 year old age group; lowest rates were seen among those age 60 years and older. Similar patterns were seen at 5 year follow-up, although differences between highest and lowest rates were smaller. Disenrollment rates were slightly higher among males. Disenrollment among members with any one of the measured diseases was lower than among members without that condition. **Conclusions:** Disenrollment (and retention) rates vary by age and disease state and less so by gender. While overall disenrollment is useful for many purposes, rates by member characteristics can be essential while planning studies of specific populations.

Keywords: HMORN, Participant characteristics, Enrollment studies
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PS1-17:

Herpes Zoster in Children

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Background and Aims: Vaccine-strain herpes zoster (HZ) is a potential adverse outcome of varicella vaccination. Data are needed on the incidence of and risk factors for vaccine-strain HZ among children <18 years of age. The Centers for Disease Control and Prevention (CDC) funded a study at Kaiser Permanente Northwest (KPNW) to determine the number and proportion of pediatric HZ cases caused by varicella vaccine, assess positive predictive value (PPV) of physician diagnosis of HZ, and compute incidence of vaccine and wild-type HZ in the KPNW population. **Methods:** We used electronic data to identify all pediatric medical office visits with a HZ diagnosis. During the visit, the provider collected a lesion specimen and completed a questionnaire. The study nurse called to interview the parent and, if no specimen was previously collected, schedule a home visit to obtain it. A follow-up questionnaire on severity and duration of HZ was returned four weeks after rash onset. Specimens were sent to the National Varicella-Zoster Virus (VZV) Laboratory at the CDC for PCR analysis to confirm presence of the virus and classify it as wild-type or vaccine-type. **Results:** From 5/2005 to 3/2009, we enrolled 308 subjects in the study. Two-hundred eighty-one (96%) had adequate lesion specimens for PCR analysis. We found VZV in 75% of adequate specimens; 69% were wild-type, while 9% were vaccine-type and 1% (2) were vaccine:wild-type recombination. Among vaccinated subjects, 69% had wild-type HZ. The PPV for provider diagnosis of 'definite HZ' was 83%: 85% for unvaccinated subjects and 76% for vaccinated subjects. Incidence rates for vaccine-strain and wild-type VZV in plan children age 0-17 will be presented. **Conclusions:** Vaccine-strain VZV was found in a minority of HZ cases in this age group. We observed recombination of vaccine-strain and wild-type viruses in two subjects. Provider diagnosis of HZ was good overall.

Keywords: Herpes zoster, Diagnosis of herpes zoster, Varicella vaccination
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PS1-22:

Premature Birth, Initial Hospital Length of Stay, and Costs

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Background: Preterm birth disparities with their associated geographic, socioeconomic status and race/ethnicity factors are among the most widely recognized and least understood phenomena in the study of reproductive health. Previous studies have focused on total cost; few studies have disaggregated total charges into their components for both the preterm infants and their mothers or compared such costs to full-term births. **Aim:** To quantify and disaggregate initial hospital charges among preterm infants and their mothers compared to full-term controls. **Methods:** The study populations were comprised of mother-infant dyads that included 746 preterm cases and 3372 controls. Data were obtained from the Geisinger outpatient electronic health record, Geisinger Medical Center billing records, and the inpatient pharmacy billing database in the Geisinger Health System. Measures were derived for hospital charges, lengths of stay for infants and mothers, and the mean delivery hospitalization charges for the subset of infants and mothers who had the most frequent diagnoses, procedures, and drug classes. **Results:** The mean hospitalization charges (\$103,000 versus \$7,000) and the length of stay (16.1 days versus 2.3 days) were substantially higher for preterm infants versus controls. Extreme preterm infants (< 26 weeks) accounted for 1.3% of the total preterm births and approximately 20% of the total initial hospital charges and near term infants (33-36 weeks) accounted for approximately 14% of total births and 30% of the total charges. The most frequent inpatient medical conditions were five to 17 times as frequent among preterm infants as among the controls. The most frequent procedures and drug classes were also generally more prevalent among preterm infants. Preterm infants had generally higher charges related to inpatient diagnoses, procedures and medication utilization. The mean hospitalization charges (\$23,000 versus \$15,000) and length of stay (i.e., 5.1 days versus 2.3 days) was also higher among the preterm mothers than controls. Medication utilization was compared between the two groups and preterm mothers had higher charges related to inpatient diagnoses, procedures and medication utilization compared to controls. **Conclusions:** The most extreme premature (4.3%) of preterm births accounted for 47% of the total preterm hospital charges. Overall costs increased as gestational ages decreased.

Keywords: Preterm birth disparities, Preterm hospitalization costs, Reproductive health

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PS1-23:

The Environmental Scan: A Valuable Community Health Research Tool

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Background and Aims: The environmental scan (ES) focuses on the identification, collection, and translation of external information that may potentially influence an organization's decision making process. An ES allows an organization to address social, economic, political, and technical issues that may not be readily apparent and enables a comparative evaluation of the organization's internal strengths and weaknesses. Through understanding external elements and internal processes, the organization can respond in a more auspicious and productive manner. Health researchers are employing ESs to build on established knowledge with the goal of improving the design and effectiveness of community health programs. **Methods:** There is no one correct methodology for conducting an ES, but typically, ESs are characterized by several features. Initially, a broad spectrum of issues is examined, involving social, political, technological and other trends. Second, information may be gathered from a variety of sources, including literature reviews, surveys, interviews, focus groups, and site visits. Third, critical analysis and dissemination of collected data is promoted by the recruitment of experts from both inside and outside the fields being scanned. ESs can utilize a wide sweep of information sources, ranging from formal, established data, such as

published reports, to informal, personal contacts. Accordingly, scans may employ varying degrees of high to low technologies, ranging from Internet searches to conversations with community leaders. **Results:** Through the analysis of environmental or contextual factors, researchers can gather information to guide the design of effective health programs that are geared toward and incorporate the needs of specific communities. Recently, health researchers have used ESs to assess and improve services in a variety of community projects, including mental health, nutrition, women's health and cancer screening. These studies verify that the ES can be a vital tool in providing overall strategic direction of project development, in promoting community activation, and in raising awareness of future studies. **Conclusion:** Because of its flexible framework, the ES is a creative tool for health decision making. It is important that health researchers are knowledgeable about what this instrument entails in order to determine its potential use in community health research.

Keywords: Environmental Scans, Community health programs, Community health assessment

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PS1-24:

The Positive Predictive Value of a Hyperkalemia Diagnosis in Automated Health Care Data

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Background and Aims: The positive predictive value (PPV) of a hyperkalemia diagnosis in administrative data has not been evaluated and relationships between coded hyperkalemia diagnoses, elevated potassium concentrations and clinical signs have not been assessed. The aims of this study were to determine the performance of a coded diagnosis in administrative data at identifying 1) clinically-evident hyperkalemia and 2) patients with potassium ≥ 6 mmol/liter. **Methods:** This retrospective observational study included 8,722 patients with diabetes newly-initiating ACEi, ARB, or spironolactone therapy. The outcome measure was the first hyperkalemia-associated event comprised of a hospitalization, emergency department visit or death that occurred within 24 hours of a coded hyperkalemia diagnosis and/or potassium ≥ 6 mmol/liter during the first year of therapy. The medical records of all patients identified from administrative data as having hyperkalemia-associated events were reviewed as were a random sample of records of patients identified as not having hyperkalemia. **Results:** Among the random sample ($n = 99$) of patients identified from administrative data as not having hyperkalemia, none had hyperkalemia upon record review. Among 64 patients identified from administrative data as having hyperkalemia, all had a hospitalization or emergency department visit associated with a coded hyperkalemia diagnosis ($n = 41$), potassium ≥ 6 ($n = 9$), or coded diagnosis and potassium ≥ 6 ($n = 14$). Of the 55 total patients with a coded hyperkalemia diagnosis, 42 (PPV 76%) had clinically-evident hyperkalemia; 32 (PPV 58%) had potassium ≥ 6 . Of the 9 patients identified with potassium ≥ 6 who had no coded hyperkalemia diagnosis, 7 (PPV 78%) had clinically-evident hyperkalemia. Although 5 of the 64 patients died at the time of the hyperkalemia outcome, none had a coded diagnosis of hyperkalemia-associated death and hyperkalemia was not mentioned on the death certificate of any patient. **Conclusions:** Nearly one-fourth of patients with a coded hyperkalemia diagnosis do not have clinical signs and nearly one-half do not have potassium concentration ≥ 6 mmol/liter. Because both false positives and negatives occur when using coded hyperkalemia diagnoses to identify hyperkalemia-associated outcomes from administrative and death certificate data, medical record validation of hyperkalemia outcomes is necessary.

Keywords: Hyperkalemia diagnosis, Elevated potassium, Coded diagnosis data

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PS1-25:

Unintended Consequences of Implementing Healthcare Information Technology (HIT): A Survey of Users

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Background: Health information technologies (HIT) such as electronic medical records (EMR), computerized physician order entry (CPOE), and clinical decision support systems (CDSS) have enhanced the quality, safety, and effectiveness of medical care. There is also optimism that widespread adoption of HIT in the United States would result in significant cost savings to both providers and consumers of healthcare. However, despite the potential benefits from adopting such technologies, the adoption rates of such technologies remain low. Many observers attribute the low adoption rates to the high financial cost of the technologies, but also to unintended consequences (UC) of HIT implementation. **Methods:** Online survey of HIT implementers in the HMO Research Network and American Health Information Management Association members. **Results:** Nearly 90% of the 224 respondents were administrators or managers. The UC occurred within EMR (37.4%, $N = 83$), eMAR (1.4%, $N = 3$), other HIT system (7.2%, $N = 16$), or a combination of ≥ 2 systems (54.1%, $N = 120$). Over 60% of the systems were hospital based and 52.5% were initial implementations while 19.8% were upgrades. The majority of UC involved technical problems (46.4%) or workflow issues (39.2%). Each of the following UC occurred about 30% of the time; increased workload, poorly integrated systems, or process errors. Even after remediation efforts, the UC persisted 79.7% of the time. **Conclusions:** UC are common in HIT and difficult to resolve. Involve all stakeholders in HIT planning, implementation, and remediation processes.

Keywords: Healthcare Information Technology, Medical record systems, Medical technology

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PS1-26:

Use of an Electronic Health Record to Facilitate the Enrollment of Patients in Prospective Randomized Clinical Trials: Lessons Learned from STABILITY Trial

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Background and Aims: Large clinical trials involving common chronic conditions may benefit from recruitment using an electronic health record (EHR). We developed a novel recruitment approach using our EHR to systematically identify all patients who appear eligible for such trials. **Methods:** Patients satisfying broad inclusion and exclusion criteria, defined primarily by ICD and procedure codes, were identified from the EHR and invited by letter to call to learn more about the study. The letter also informed patients that those who did not respond would be contacted by telephone 2 weeks later. The EHR of patients expressing interest were reviewed (pre-screened), the study was described in detail, and those who still appeared to be eligible were invited to come in for a screening visit. Patients were interviewed and examined (screened) to assure that they satisfied all inclusion and exclusion criteria and remained interested. Eligible and interested subjects were enrolled. The disposition of each potential patient was tracked through each phase (response to letter and/or follow-up phone call, result of pre-screening, number enrolled). **Results:** In STABILITY, a placebo-controlled trial of darapladib (a drug that lowers LP-PLA2) in patients with severe vascular disease, 5,300 patients satisfied broad inclusion/exclusion criteria and 1,687 were sent letters inviting them to call and express their interest in possibly participating in the trial. Of the 1,687 who received letters, 587 (35%) expressed interest (either by calling or in response to our follow-up call) and were pre-screened. Of the patients who did not respond, 341 were unable to be reached. Study enrollment closed before we were able to contact 92 patients who expressed interest. Overall, 148 patients were screened, and we enrolled 101 patients, more than any of the 158 other participating institutions in the USA and more than were enrolled in 41 of 45 participating countries. **Conclusions:** These data support the ability of an