and describe the results of dissemination efforts with professional organizations.

Keywords: Standardized measures, Data harmonization

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C-B4-04:

Overestimation of Population Level Medication Adherence: Bias in the MPR Calculation of Hypertensive Patients

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Background/Aims: The Medication Possession Ratio (MPR) is a common claims-based metric for describing medication adherence. The MPR can only be calculated for patients who fill at least 2 prescriptions. Thus, patients with <2 prescription fills are excluded from the MPR denominator in population-level adherence reports. Combining prescription-ordering data available in an electronic health record (EHR) with matching claims data, we characterized the population excluded from a MPR-based adherence calculation. **Methods:** We conducted a retrospective (2004-2008) analysis of EHR and claims data for patients treated in the Geisinger Clinic. Hypertensive patients continuously enrolled for at least two years in the Geisinger Health Plan (GHP) with GHP pharmacy benefit coverage were identified using blood pressure (BP) data in the EHR and ICD-9 codes associated with clinic encounters. For all patients with an EHR order for an angiotensin converting enzyme inhibitor (ACEI) or an angiotensin receptor blocker (ARB), we matched each EHR order with the corresponding claim if one existed. **Results:** We identified 89,403 patients with hypertension, of whom 14,387 (16.1%) had at least 2 years of continuous pharmacy benefits. Median age was 67 years and 51% of the cohort was female. There were 4,934 patients with = 1 order for an ACEI and 1,251 patients had = 1 order for an ARB. The MPR could not be calculated for 18.8% (n=928) of patients based on ACEI orders and for 32.3% (n=404) of patients based on ARB orders. Patients for whom the MPR could not be calculated had a higher systolic BP than patients with an MPR measure (137 compared to 134 for patients with an ACEI; 139 compared to 134 for ARBs), and a higher diastolic BP (77.91 compared to 76.92 for ACEI; 76.16 compared to 75.33 for ARBs). **Conclusion:** In this primary care population, a sizable proportion of patients failed to fill more than one antihypertensive prescription. These patients are likely to be excluded from population level adherence estimates. Further analyses will examine differences between the “MPR” cohort and those patients excluded from the calculation.

Keywords: Medication adherence, MPR

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PS1-16:

The Role of Health Information Technology Regional Extension Centers in Health Care Transformation

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Background/Aims: To encourage the adoption and “meaningful use” (MU) of electronic health records (EHRs) as part of health care reform and the ARRA stimulus legislation, the federal government is providing financial incentives to providers who adopt certified EHRs and meet criteria for their meaningful use. The federal Health Information Technology (HIT) Regional Extension Center (REC) program was created to provide technical assistance (TA) to priority primary care providers (PPCPs) in small practices to help them adopt EHRs and qualify for MU incentives. The New Mexico HITREC is one of 62 nationally, each of which will assist 1000+ providers. Such groundbreaking incentives and assistance present a potential EHR “tipping point” for small practices. **Methods:** NM HITREC recently began to address its goals for the two year funding: Outreach to educate providers through conferences, presentations, and one-on-one contacts concerning the MU criteria and incentives and the benefits of the TA available through the REC; recruitment of PPCPs willing to adopt EHRs and receive HITREC assistance;

promotion of HIT workforce training programs; assisting providers with selecting and implementing EHRs; connecting to the state’s health information exchange; using EHRs for performance measurement and other MU criteria; sharing effective tools with other RECs; and participating in local and national evaluation efforts. New one-on-one recruitment procedures have been undertaken recently and are proving more effective. **Results:** NM HITREC is in its early months of recruitment, and has signed approximately one fourth of the potential providers as of November 1, 2010. This number is under the goal set for this stage, but the rate of recruitment has been increasing using the new recruitment techniques. It is anticipated that 800 or more will be recruited by late March, 2011. These results will be reported at the March conference, along with early EHR implementation successes and insights. **Conclusions:** It is anticipated that the experience gained by the RECs will expedite the implementation of EHRs in small practices and provide guidance even to large and specialty practices seeking to achieve MU. This in turn should have a transformational effect on quality and efficiency for providers in all practices.

Keywords: Electronic health record, Meaningful use, HIT Regional Extension Center Program

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PS1-15:

Fathoming the Depths – Looking for Treasure in the Electronic Medical Records of Western Washington Network Enrollees

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Background/Aims: When a particular health event or condition is uncommon, researchers consider broadening the target population. All Group Health (GH) patients have an electronic medical record (EMR). However, GH EMR implementation has only occurred at GH-owned clinics. For studies requiring medical record review in addition to other data collection, the practice has been to include only enrollees at GH-owned clinics. However, perhaps EMR data are more widely available. We conducted a pilot study of: How many GH network enrollees (i.e. enrolled at non-GH owned clinics) have GH EMRs that contain clinical data? What kinds of visits generate rich data in the EMR for network enrollees? **Methods:** Our population was Group Health (GH) enrollees enrolled at network clinics in western Washington. Although this population is demographically comparable to enrollees at GH-owned clinics, the assumption has been that clinical data in the EMR is missing or meager, making them poor candidates for studies requiring chart review. We examined 4 indicators (patient use of the shared medical record, or presence of scanned documents, transcriptions, or vitals in EMR automated data). We chose these as likely markers of clinical information in the GH EMR, and randomly selected 5 enrollees for each indicator and reviewed their EMRs. **Results:** Among enrollees at network clinics, 20% (10,327/51,637) had at least one of the four selected indicators. Only 1 of the 20 records reviewed had no clinical EMR data. The best indicator of a rich EMR was presence of vitals. **Conclusion:** Enrollees at network clinics with visits to GH clinics (or with recorded vitals in EMR automated data) may thus be a suitable target population to add to studies that include chart review. However, this may only add 1/5 of all network enrollees to a study population. Future investigations might include: 1) Select enrollees at network clinics with hospitalizations to see what outside utilization is captured by the GH EMR; 2) Examine how health plan type affects availability of EMR data.

Keywords: Electronic medical record, Network

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PS1-01:

Infrastructure Setup for the Informatics for Integrating Biology and the Bedside Framework

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Background/Aims: Informatics for Integrating Biology and the Bedside (I2B2) is a data querying tool enjoying increased use among HMORN members. While I2B2 uses standard software and includes installation documentation from the developers, many parts of the installation and configuration process are challenging to implement. Simplifying the initial setup removes a significant barrier to adoption. **Methods:** A combination of simplifying assumptions (limiting choices) and scripts (reducing manual file edits) were developed to reduce time-consuming and error-prone steps in the I2B2 installation process. **Results:** Following the procedure developed, a new I2B2 installation can be a predictable and straightforward process. **Conclusions:** Simplifying the installation and initial configuration of the I2B2 infrastructure provides multiple benefits. If your organization is new to I2B2, you will be able to reach the goal of using I2B2 more quickly by following our process. If you have a need to create multiple I2B2 instances - to test different data loading approaches or different ontologies - our process will allow you to quickly create a development or a test/quality assurance installation of I2B2.

Keywords: I2B2, Infrastructure

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PS1-41:

Implementing an XML-Based Query Tracking System (whether you want one or not)

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Background/Aims: Systems that lower technical barriers to data access are generally viewed positively. After all, why tie up programmer resources when a simple web-based query system like I2B2 makes complex querying straightforward? Quick and painless summary information is very useful for research. The downside is that easy data access means the potential for abuse increases. Currently, programmers serve as gatekeepers. Programs and meeting notes serve as rudimentary audits of who asks what questions of our data. Easy data access gives the impression that no one is looking at the queries. Group Health Research Institute has created an I2B2 query audit system to serve two functions. First, users know the system is tracking their queries. Second, in the event that sensitive data are disclosed, the audit system may allow stakeholders to determine who was responsible. **Methods:** This presentation will demonstrate a query tracking system that exploits the XML capabilities of I2B2. **Results:** The presentation will cover the technical aspects of XML and associated technologies and provide an overview of web-based technologies including Apache and PHP. We will conclude by raising some interesting questions related to query tracking. For example, if we agree that query tracking is a good idea, we must then consider who has access to the queries. Should we be concerned about someone taking our ideas and getting a jump on a grant application? **Conclusions:** Query tracking is a technical problem that can be solved. This presentation illustrates one approach. However, query tracking raises many questions that must be addressed as we embrace easy access data systems such as I2B2.

Keywords: I2B2, XML

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PS1-07:

Comparing Dental Utilization Among Diabetic & Matched Non-Diabetic Adults in an Insured Population

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Background: About one-third of adults with diabetes have severe oral complications. However, limited previous research has investigated differences in dental care utilization between adults with and without diabetes. **Objectives:** To compare dental care utilization between adults with

and without diabetes using a novel application of hurdle models, a statistical approach that decomposes utilization into components representing the decision to use services, the specific type of services used, and the amount of services used. **Methods/Research Design:** We conducted a retrospective cohort study using data from Washington Dental Service and linked records from Group Health Cooperative on enrollees continuously and dually insured between January 1, 2002 and December 31, 2006. Five years of follow-up dental utilization was compared between adults with and without diabetes. Propensity score matching was used to adjust for differences in baseline covariates between the two groups. **Results:** Post-matching multivariable results show that adults with diabetes had lower odds of visiting a dentist (OR=0.74, $P<0.001$). Among those with a dental visit, patients with diabetes had lower odds of receiving prophylaxes (OR=0.77, $P<0.001$), fillings (OR=0.80, $P<0.001$) and crowns (OR=0.84, $P<0.005$) and higher odds of receiving periodontal maintenance (OR=1.24, $P<0.001$), non surgical periodontal procedures (OR=1.30, $P<0.001$), extractions (OR=1.38, $P<0.001$) and removable prosthetics (OR=1.36, $P<0.001$). **Conclusions:** Our results underscore the need to instill appropriate changes in oral care seeking behavior that will help adults with diabetes receive early intervention, possibly reducing subsequent severe oral disease and costs. We recommend that organizations focused on oral health and diabetes care work jointly to initiate programs that educate patients with diabetes about preventive care and promote periodic dental visits. We also recommend that dental carriers not only increase dental coverage for adults with diabetes but also develop incentive products to promote preventive care seeking behavior.

Keywords: Diabetes, Dental care utilization

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Health Insurance and Economics

C-A5-04:

Quasi-Experimental Evaluation of a Value-Based Health Plan Design Among Healthcare Employees

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Background/Aims: Value-based health insurance products are rapidly gaining popularity and interest among large employers. To date, few data exist to inform policymakers regarding the impact of these plans on health, productivity and costs. The aims of this study are to determine the impact of a novel value-based health plan on employee worksite productivity, health status, healthcare quality, and employee satisfaction at a large employer. **Methods:** This study is a quasi-experimental time-series design with two groups. The intervention group is employees of Group Health Cooperative (GHC) who receive health benefits; the control subjects are employees of Kaiser Permanente Colorado (KPCO). Starting in 2010, the Group Health employees' health plan introduced free and reduced copays for drugs associated with treatment of six chronic diseases, waiver of copay for a fixed number of chronic care visits and devices and increased cost shares for high end imaging. Staff receives a 450 dollar discount on premiums if they complete a health assessment and engage in health behaviors. No changes were experienced at KPCO. Key outcomes will be assessed with a combination of linked survey (for workplace productivity, health status and behavior, satisfaction); claims (for utilization, quality, cost); and human resources (for absenteeism and demographics) data from 5000 randomly selected subjects at each site. Descriptive statistics and GEE regression will be used to characterize differences in outcomes over time between groups. **Results:** Ninety two percent of GHC employees completed the baseline health assessment to qualify for a premium discount. Baseline survey results sent to selected subjects resulted in 73% and 59% response rates from GHC and KPCO respectively. Approximately 62-64 percent agreed to linkage of survey and administrative data. Baseline survey data indicate comparable populations with respect to gender (both 80% female), marital status (both 69% married/partner), education and race (both 79% white) with modest