benefit from anticipatory care management. **Methods:** We developed a historical cohort of 27,470 Medicare Advantage beneficiaries in an integrated HMO during 2006 and 2007. We used descriptive analyses to characterize three sub-populations (those who reach the DBT in 2006 only, in 2006 and 2007, or neither year) in terms of demographics, morbidity, generic and brand name medication use, utilization, diagnoses, procedures, use of catastrophic benefits, and smoking status. **Results:** 859 members reached the DBT in both 2006 and 2007 (repeaters), 904 in 2006 only, and 25,707 in neither year. Relative to those who reached the DBT in neither year, repeaters had significantly higher morbidity; as reflected by significant differences between groups in all descriptive categories. However, only a subset of these characteristics significantly differentiated between repeaters and those who reached the DBT in 2006 only: repeaters had higher rates of outpatient utilization (primary care, specialty care, and emergency department); were more likely to have a history of tobacco use, diagnoses of COPD, history of stroke, long-term anticoagulation, and dementia; and had greater use of specific trade name medications, particularly those used to treat respiratory symptoms. Repeaters and those who reached the DBT in 2006 only did not differ in socioeconomic status, use of specific generic medications (except prednisone), reaching catastrophic coverage, or multiple chronic diagnoses and procedures. **Conclusions:** In this initial exploration, Medicare Advantage beneficiaries who repeatedly reached the DBT differ from those who only reached it in one year in utilization, selected diagnoses, and use of certain trade-name medications. Several of these brand medications are for pulmonary conditions in individuals with a history of smoking—a finding that deserves additional investigation.

PS2-21:

The Return on Investment of a Laboratory Program to Decrease Adverse Events of ACE Inhibitors and ARBs

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Introduction: The efficiency of patient safety interventions is not well studied, including laboratory monitoring for drug therapy. Although 30% of patients receiving inhibitors of rennin-angiotensin system (RAS i.e. ACEI and ARB medications) are not monitored according to guidelines, knowledge of the efficiency of decreasing adverse drug events through monitoring programs above usual care is lacking. **Methods:** We focused on laboratory monitoring of new users of RAS inhibitors to help prevent adverse events of hyperkalemia and acute renal failure. We used a probabilistic decision model to synthesize multiple data sources to inform how increasing monitoring above usual practice changes cost and outcomes from the payer perspective. We accounted for differential timing of costs and benefits and discounted at a 5% rate. Costs included the monitoring program, offsets from reduced care (e.g., hospitalization) and litigation costs. Data from a large integrated health plan were used to estimate the community-based probability of adverse events. The potential to reduce adverse events was estimated from chart review. We examined cost-effectiveness at \$30K and \$100K per QALY in the overall population, patients with diabetes, and patients with chronic kidney disease (CKD). **Results:** Adverse events were most common in those with CKD; their cumulative incidence rate was 0.041 (95% CI, 0.047 to 0.037) compared to 0.016 (0.017 to 0.014) and 0.010 (0.011 to 0.010) in the diabetes and overall populations, respectively. Intervening on all new users or the subset with diabetes was cost saving <1% of the time. A monitoring program restricted to patients with CKD was cost saving with a probability of 95% in the base case. In CKD patients, if the program was only half as effective, the probability of cost savings was 65%; if the program had a lower uptake rate (49% instead of 82%) the probability of cost-savings was 30%. Intervening on all patients, or the subset with diabetes, was never cost-effective with a probability exceeding 5%. Intervening on patients with CKD was cost-effective at least 65% of the time even under the most pessimistic scenario. **Discussion:** Our findings illustrate that, for laboratory monitoring to be cost-effective using commonly accepted definitions, the patient population must be at high enough baseline risk of adverse events. Further inquiry into the willingness to pay for patient safety interventions is needed.

PS2-29:

Development, Implementation and Evaluation of a Web-based Curriculum on Pharmaceutical Marketing and Prescribing

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Background/Aims: To develop, implement, and evaluate a web-based curriculum on drug marketing and prescribing with funding from off-label marketing lawsuit settlement funds. **Methods:** Content experts developed a course entitled “Optimal Prescribing” in two stages: a live pilot and a web-based course consisting of modules with slides, video clips, narration, cases, interviews, and interactive elements. The course was presented to physicians and midlevel providers from the Lovelace Health System in Albuquerque, New Mexico. Feedback was collected at the live pilot and participants were surveyed later, as well as a control group of providers who did not attend the pilot course, to assess the impact of the education on attitudes about relationships with industry representatives, the amount and source of information that guides prescribing decisions, and self-reported changes in prescribing patterns. Data were analyzed and summarized to revise the material to produce web-based modules for use by prescribers in the public domain. The final web-based, 3-credit course includes a pretest, posttest, and a 90-day follow up survey, which are currently being collected. **Results:** In the first two months the course was available, 173 people accessed it and 40 successfully completed it, earning credit (16 more took the posttest, but did not pass). Initial reports on the learner’s performance show improvements on all posttest questions. Of the 20 questions 17 showed >10% improvement, with a maximum 37.12% improvement. The greatest improvements were in the learner’s ability to: 1) acknowledge the fact that even very brief sales calls can result in a 16% increase in drug sales, 2) distinguish absolute from relative risk reduction, and 3) identify acceptable evidence for off-label choices. Of the total users, 78% would recommend this course to colleagues (29.35% said yes, enthusiastically). **Conclusions:** Optimal Prescribing has been piloted, revised, and launched as a web-based course, and is being accessed by a number of people with positive results; however, less than 25% have fully utilized the course and earned continuing education credit. Data collection and analysis will continue over the remainder of the 3-year life of the course and may lead to improvements in course design.

Research Administration

C-A1-01:

HMORN Administrator’s Annual Review and Planning

The administrator’s group will review the activities and projects that were planned during the 2008 conference and solicit ideas for the coming year. Please join in the discussion — we’d love to have participation from all member organizations. Current activities being discussed include Effort Reporting, Subcontract and Data Use Agreement Templates, Website Development, Organizational Structures and Benchmarking, Recruitment and Development of Research Administration Staff.

C-B1-01:

Using an Electronic Medical Record to Document and Track Research Activities and Expenditures

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Background: Patients enrolled in research studies need to have research related events such as laboratory orders and results, radiology orders and results, study related medications, diagnoses, adverse events, and other clinical events documented and tied to research encounters. Recording these activities within an electronic medical record (EMR) facilitates efficient tracking of resource utilization and cost accounting related to research activities. **Session Goals:** Using Epic Systems Corporation (Verona, Wisconsin) EMR, we will demonstrate how research encounters are scheduled, tied to a research study guarantor account, and how the research encounter is used to document research activities. We will demonstrate how

to track research specific activities for utilization management, for cost accounting, for study related reporting, and for reimbursement of ancillary departments for research services. We will discuss the documentation of regulatory and compliance requirements within a research encounter and link them to research related activities.

C-D1-01:

Moving From Island of Excellence in Oceans of Secrecy to Supporting Scientific Excellence as a Team

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Background/Aims: Group Health Cooperative has adopted the Lean management system as a key organizing methodology for eliminating waste and inefficiency in the healthcare environment by organizing the work around value provided to the customer. This poster presentation demonstrates how the Center for Health Studies, the research arm of Group Health Cooperative, applied Lean principles to the grant application submission process with the goals of improving quality and customer service by reducing waste and defining standard work. Before applying Lean methodology, the application submission process was inefficient, often requiring time-intensive, heroic efforts from project and administrative members to submit an application for funding on time. Roles were not clear and work was performed in isolation or silos. Duplicate and rework often occurred. This resulted in poor staff morale and customer requirements not being met. There were no established standards and best practices were often not shared resulting in different and inconsistent approaches to the work with variable outcomes. **Methods:** Using the two organizing principles of Lean, “continuous improvement and respect for people,” as the foundation for this project, we used a combination of quantitative and qualitative research methods. We conducted a survey of key stakeholder groups and observed work processes during a major grant-application funding cycle. Once the data was collected, a cross-functional group of stakeholders held a rapid process improvement workshop over a period of one week to review data, develop improvement targets, and develop a standardized process. The process improvements were implemented over a period of three months. **Results:** By reducing waste and implementing standard work across the application submission process, the project and research teams improved their working relationships, improved stakeholder and customer satisfaction, improved workflow, eliminated significant non value added steps and improved their capacity to respond to fast turnaround requests. **Conclusions:** Lean tools and processes enabled the Center to reduce waste and inefficiency across the application submission process and grow internal capacity. Teams are better equipped to recognize and remedy daily work issues, increasing overall responsiveness to changes and challenges in the funding environment. Daily leadership and management is a critical element to succeeding in sustaining these improvements.

Virtual Data Warehouse

PS1-36:

VDW Pharmacy File: Strengths, Weaknesses, and Recommendations

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Background: The HMO Research Network (HMORN) Virtual Data Warehouse (VDW) is a series of dataset standards and automated processes designed to facilitate the process of multisite research. It is virtual in that there is no centralized database; data continue to reside locally. Our objective was to assess the cross-site availability and completeness of the outpatient prescription dispensing or Pharmacy file. **Methods:** The VDW Pharmacy Working Group created a data checking plan to assess overall data availability and completeness of the Pharmacy file. A distributed SAS program was run at each HMORN site with a VDW Pharmacy file (n=11), with de-identified summary count data

returned for analysis. The key Pharmacy file variables were National Drug Code (NDC), days supplied, and amount dispensed. NDCs were considered nonstandard for these reasons: not having exactly 11 digits; containing a character; or consisting of a single repeated number (e.g., 99999999999). For days supplied and amount dispensed, values of < 0, 0, > 500, or missing and values of < 0, 0, > 1000, or missing were considered out of typical range, respectively. **Results:** Eleven sites have Pharmacy data from 2000 June 2007; some have data going back more than 10 years. There were 61 million dispensings in 2007, with an average 5.1 million monthly dispensings among 2 million monthly users. Average monthly dispensings per user was 2.5, and the range across sites was 2.2–2.9. Across all sites from 2000–2007, < 0.1% and 0.3% of dispensings had a missing or nonstandard NDC, respectively; and 0.1% and 0.3% had days supplied and amount dispensed out of typical range, respectively. Few dispensings were for over-the-counter medications (5%), medical supplies (2%), or infusions (0.1%). 89% of elderly (age > 65) with a drug benefit had at least 1 annual dispensing (average monthly dispensings per user, 3.5), compared to 52% of those without a benefit (average, 3.2). **Conclusions:** The VDW Pharmacy file has good overall data quality, with few problems found, especially since 2000. Investigators can have confidence in the data in the Pharmacy file but may choose to limit studies to more recent years.

PS1-08:

The VDW Census File: Strengths, Issues, and Recommendations for the Future

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Background/Aims: The VDW's Census file contains demographic and socioeconomic data not available anywhere else. This makes it a unique resource for VDW research including studies using Geographic Information Systems data. However, the extent and quality of Census file data at implementing sites has not been subjected to systematic scrutiny. The VDW Census Workgroup was formed under the auspices of the new HMORN governance of the VDW. This workgroup is charged with assessing the census file specification and the quality of the implemented files at HMORN sites. The objectives for the workgroup are to: 1) document area-level data that are currently available at each HMORN site; 2) determine the completeness and consistency of the data; and 3) provide recommendations for improving the scope and completeness of the data in the VDW Census file. **Methods:** The workgroup has prepared specifications for a set of descriptive tables, and a metadata survey inquiring how sites have implemented the current Census file. We are currently writing a VDW program to generate site-specific descriptive data. **Results:** Our report to the Operations Committee will focus on extent and quality of the Census file data at the various sites, and the consistency in implementation of the specifications across sites. The proposed poster will highlight our findings and provide a more comprehensive view of the available data. The workgroup is currently analyzing data from the metadata survey. A VDW program is being written to generate a rich set of site-specific data. The final report will serve as a basis for establishing the current state of the Census files at each site, and for making recommendations for future improvements. It will also serve as a useful reference for future grant writing efforts. **Implications:** We anticipate that the products will facilitate use of the Census File data within and across sites to augment and/or generate research within the CRN that requires detailed geographic data. Our data completeness and quality summaries will enable researchers to assess the feasibility and potential utility of the Census File within their research projects. **Conclusions:** We expect to conclude that the data are of general high quality at the sites, but that current ambiguities in the specification will need to be remedied.