and will be enhancing, implementing, and pilot testing this intervention to support communication and prevent errors.

Keywords: Medication errors, Pediatric cancer, Health information technology

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C-B3-02:

Primary and Early Non-Adherence in an HMO Population

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Background: Adherence to prescribed medications is associated with improved health outcomes in many chronic conditions. Measures of adherence typically depend on administrative data from pharmacy dispensing databases and require a minimum of two drug dispensings to calculate (ongoing adherence). Patients who do not pick up the initial prescription (primary non-adherers) or who fill it only once (early non-adherers) are excluded from calculations based on pharmacy databases. Reasons for non-adherence in primary and early non-adherent patients could be different from those in patients with ongoing dispensings who discontinue or who are not fully adherent to their medications and could vary across diseases or drug classes. **Aim:** To characterize primary and early non-adherers among a population of patients with diabetes, hypertension, and/or hyperlipidemia enrolled in an integrated health system. **Methods:** We identified Kaiser Permanente Colorado (KPCO) members with a newly-initiated order for a medication of interest in 2007 and 2008. Orders were identified using electronic health record data; these orders were sent to the pharmacy information management system (PIMS). From PIMS we determined if/when dispensing occurred. We classified patients into ongoing adherence and primary and early non-adherence groups. If patients had new orders for more than one drug of interest, we classified them as early or primary non-adherers only if they were not in the ongoing adherence group for any of the drugs. Patients were also classified according to drug group (antidiabetic, antihypertensive, antihyperlipidemic, or multi-drug). **Results:** Of 15,417 patients with a newly-initiated order for a drug of interest, 1147 (7.4%) were in the primary non-adherence group and 3355 (21.8%) were early non-adherers. Individuals initiated on more than one drug were most likely to be in the ongoing dispensing group. Almost 10% (754 of 7636) of individuals prescribed an anti-diabetic or antihyperlipidemic drug did not fill their first prescription, twice as many as among those prescribed an antihypertensive drug. **Conclusions:** Excluding the relatively large proportion of patients who do not receive ongoing dispensings of a newly-initiated drug yields an incomplete picture of medication adherence and thereby the potential factors contributing to non-adherence. For example, we found primary non-adherence differed across therapeutic classes.

Keywords: Adherence, Medication, Chronic conditions

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PS2-32:

Barriers and Facilitators for Medication Adherence

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Background: Literature has shown many patients do not adhere to prescribed medications. To help understand factors related to medication adherence, we conducted a survey of adherent and non-adherent patients. **Objective:** To determine factors that serve as barriers and facilitators to medication adherence for patients with diabetes and asthma. **Methods:** We identified all members >18 years with at least two prescription fills for > 28 days' supply from January 2007-March 2009. We focused on medications (n=128) to treat depression, hypertension, hyperlipidemia, diabetes, asthma/COPD, multiple sclerosis, cancer or osteoporosis. Diagnoses were identified by ICD-9 code and merged with pharmacy claims. Adherence was calculated by the

Medication Possession Ratio at a threshold of 80%. We randomly selected 500 individuals with the two conditions with the poorest adherence to survey (asthma 32% and diabetes (51%), half of whom were adherent and half who were not. Using the ASK-20 questionnaire as our basis, we added questions about facilitators and barriers to adherence. **Results:** Approximately 30% of patients forget to take their medications, 16% run out of medication because they don't refill in time, and 22% had taken a medication more or less than prescribed in the past month. Barriers most commonly noted were an irregular schedule (22%), having to take pills with food (13%), and being too busy to keep prescriptions filled (12%). Facilitators most frequently reported were taking medications at the same time daily (95%) and using a weekly pill reminder (47%). We are currently analyzing open-ended comments to identify additional barriers and facilitators. We will also conduct a subgroup analysis (e.g., by gender, age). **Conclusion and Implications:** Building routine into one's medication-taking behavior appears to be a key factor to ensuring adherence. Finding ways to help patients in this effort remains an important consideration of the health plan. The findings of this study will help guide discussion within the health plan's pharmacy administration team to assist patients in their efforts to adhere to the medication regimens prescribed and thus maximize the benefits of prescribed therapies.

Keywords: Medication adherence, Barriers, Facilitators

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PS2-23:

Reducing Rehospitalization in Survivors of Critical Illness: Description of a Novel Interventional Strategy

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Background/Aims: Older patients who survive a critical illness are at increased risk for mortality and rehospitalization. Ten percent of ICU survivors discharged to home are rehospitalized within a week, and nearly one-third are readmitted within 180 days. Contributors to these negative outcomes may include complex discharge plans, unrecognized ICU-associated illnesses and separation of inpatient and outpatient medicine through shorter outpatient visits and the hospitalist movement. These factors contribute to the challenges of care transitions and further limit the care coordination of the ICU survivor with complex medical problems. The purpose of the project is to pilot a model of transitional care for older ICU survivors. We propose an innovative model of transitional care for older ICU survivors that has the potential to reduce rehospitalization rates, improve morbidity and decrease risk of mortality. **Methods:** We will target patients 55 years of age or older who have survived a critical illness in the medical ICU and are to be discharged home. We will exclude patients who are unwilling or unable to assume patient responsibilities. Patients (and caregivers) will be empowered through the support of a transitional coach who encourages the patient and caregiver to have a more active role in the health of the patient. Such efforts include medication reconciliation, identification of patient-selected goals, and education about self-management and communication of medical issues. The ICU Survivors Follow-up Care Clinic will be created to address ICU-specific issues that we believe may contribute to the negative outcomes of critical illness. Through these two interventions, we will create a detailed care plan and deliver a coordinated handoff to the primary care physician. **Results:** The project will be evaluated for feasibility and effectiveness using the RE-AIM framework. We will conduct cost analysis to determine the long term sustainability of the program. **Conclusions:** Older ICU survivors are at risk of hospital readmissions for many reasons. A novel program that integrates patient empowerment and early recognition and follow-up of ICU associated illness may impact these negative outcomes.

Keywords: Rehospitalizations, Chronic disease management, Critical illness

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C-B4-01:

Provider Experience Using a Web-based Tool for Chronic Disease Management in Primary Care

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Background/Aims: Primary Care Providers (PCPs) are seeing more complex patients who were previously managed by specialists. PCPs may not have the time or expertise to fully elicit or evaluate all patient complaints, or apply the detailed evidence required to manage these conditions. We describe provider experience with eCVD, a web-based cardiovascular disease (CVD) management system for use in primary care. eCVD incorporated a shared-decision making (SDM) tool linked to a clinical decision support (CDS) tool that, together, were designed to promote the development of preference-sensitive and evidence-based care plans. **Methods:** Prior to a primary care encounter, patients completed a behavioral risk factor questionnaire to calculate their CVD risk. Patients at elevated risk used the eCVD system, which included an SDM tool that informed patients of their CVD risk, educated them on the types and benefits of risk factor-specific treatment options, and allowed them to select their preferred treatment options. Via an alert embedded in the electronic health record (EHR), the provider could access a CDS tool displaying both tailored, guideline-based recommendations and the patient's chosen treatment preferences. We tracked use of the CDS and conducted structured interviews with providers to understand their experience with eCVD. Interview domains included: logistics/workflow, mode of presentation, content, patient preferences, and improving efficiency/effectiveness. **Results:** The CDS alert was presented for 118 patients; only 21.2% were opened by providers. Initial review of interview data showed that providers did not open the CDS alert due to time constraints or because it was indistinguishable from other EHR alerts. Providers stated that they believe discussing a patient's preferences for care is important but difficult to do with complex patients because of the time needed to: 1) review all relevant data; 2) determine additional data needs (e.g., labs); 3) determine the appropriate clinical course of action; and 4) educate the patient. **Conclusions:** Models of technology adoption highlight the importance of usefulness and usability of a tool like eCVD. Our data suggest that, while the SDM/CDS content was useful, usability issues remain. Detailed thematic analysis of how the tool was accessed and the functionality it provided will be completed in December 2010.

Keywords: Shared decision-making, Clinical decision support, Health information technology

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PS2-33:

Patient Characteristics Associated with Medication Adherence

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Objective: To help understand medication adherence within HealthPartners, we developed a study to assess factors associated across eight different conditions. This presentation focuses on associated patient-related characteristics. **Methods:** We identified all members 18+ with a minimum of two prescription fills for >28 days' supply within 1 year between January 2007 and March 2009. Medications of interest (n=128) were identified for the treatment of one of the following eight diseases: depression, hypertension, hyper-cholesterolemia, diabetes, asthma/COPD, multiple sclerosis, cancer or osteoporosis. Diagnosis records were identified by ICD-9 code and merged with the prescription order records. We then examined differences across conditions by age, sex, race, co-morbidity and geo-code. Data were examined first with patients who had only one of the eight conditions and had only one medication (n=15,334). Analyses were then repeated on the population of patients who had any number of conditions and any number of medications (n=31,636 patients). Adherence was calculated by the Medication Possession Ratio. We used an 80% threshold. **Results:** Statistically significant differences were found. Males were generally more adherent than females, although the magnitude was small. Whites were more adherent than patients of other races and older patients were more adherent than those younger. Adherence was higher among patients living in areas having a higher proportion of residents with a high school education, lower poverty, and higher family income. Among patients with any number of conditions drug adherence increased with lower Charlson score, having fewer of the eight conditions we

considered, and being on fewer drugs for those conditions. Substantial variation was found in drug adherence by condition, with multiple sclerosis, hypertension, hyperlipidemia, osteoporosis, and cancer having a high percentage of patients considered adherent (75% +). Whereas adherence rates for depression, diabetes, and asthma/COPD were 62%, 51% and 33% respectively. **Conclusion and Implications:** We expected to find adherence to be higher as pharmacy is a covered benefit and access to medications available through multiple channels. Never-the-less, significant differences were found by sex, age, race, SES and across the multiple conditions studied. There remains great room for improvement specifically related to treatment for diabetes and asthma.

Keywords: Medication adherence, Patient characteristics

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PS2-20:

The Development of Educational Materials to Assist Family and Friend Caregivers and Healthcare Providers in Caring For Persons with Incontinence and Dementia

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Background/Aims: Incontinence and associated skin damage can occur in Alzheimer's disease or dementia (AD), however few educational programs directly address these problems. Informational needs related to incontinence and skin care in dementia were assessed among informal (family/friend) caregivers and healthcare providers in order to develop educational materials.

Methods: Audiotaped focus groups or interviews were conducted with informal (family/friend) caregivers (goal n=56) and healthcare providers (goal n=10) to assess health literacy content (e.g., knowledge, skills), attitudes and preferences for format of materials. An informational and supportive intervention is currently being developed based on the results of this assessment, as well as review of current literature and recommendations by expert clinical consultants. **Results:** A total of 48 caregivers and 11 healthcare providers participated in focus groups/interviews. Preferred format of materials for both caregivers and providers involved informational brochures or a FAQ sheets; very few preferred electronic materials. Based on needs assessment results, topics have been prioritized for development of caregiver educational materials: (1) Relationship between incontinence and AD (e.g., prevalence, reasons why incontinence occurs in AD, incontinence as a health problem and not a behavioral problem), (2) Managing incontinence (e.g., handling undressing/dressing and toileting, diet/fluid restrictions), (3) Preventing Skin Issues (e.g., skin damage descriptions, guide to absorbent and skin care products, step-by-step instructions for skin care), (4) Talking to a healthcare provider (e.g., when to discuss topic, terms to use), (5) Caring for the caregiver (e.g., importance of self-care, preventing isolation, sharing experiences with other caregivers), and (6) Questions to ask when considering assisted living or long-term care (e.g., how to assess facility's management of incontinence and skin issues among persons with AD). These materials will be shared with healthcare provider subjects. Provider-specific educational materials will also include a short, intake survey that can be administered prior to appointment to prompt inquiry regarding incontinence, and a reference list of key articles related to incontinence and AD. **Conclusions:** Supportive and informational educational materials are being developed regarding incontinence and skin care to meet the needs of caregivers and healthcare providers of persons with AD. Final materials will be presented.

Keywords: Dementia, Incontinence, Information needs

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PS2-13:

Why Patients Fail to Complete Laboratory Monitoring Requests

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