culture. **Conclusions:** Based on the results, our recommendations for increasing TRIP are: (1) ensure integrated development of a master data warehouse; (2) improve communication with special emphasis on involving researchers more directly with DS teams; (3) promote further research to identify what works/does not work in implementing TRIP; and (4) 'think globally, but translate locally.' Funded by NIH/AHRQ for the HMORN CCSN (Coordinated Clinical Studies Network).

Abstract PS1-41

A Diabetes Quality Improvement Project at a Rural Primary Care Clinic

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Background: In reviewing first quarter clinical quality metrics in 2006, the primary care department at the Merrill Center identified a statistically significant drop in glycemic control for their diabetic population that did not occur across the clinic system-wide. Quality improvement changes were implemented from mid 2006 through mid 2007. **Aim:** To increase glycemic control more than 50% over 12 months as evidenced by the percentage of patients with diabetes having most recent A1c test results <7%. **Methods:** The system-wide quality improvement initiative increased provider awareness and educated providers on the need to improve clinical outcomes for patients with diabetes. Providers partnering with nurse educators resulted in increased referrals to the Diabetes Self Management program. Diabetes educators intensified insulin dosing for patients with uncontrolled blood sugars through use of a standard protocol. In addition to expanding existing diabetes services and hours, telephonic care management was initiated for high risk patients. **Implementation:** An electronic medical record (EMR) and tablet computers improved the information that providers and other members of the care team could use to access at the point of service. An electronic reminder system helps identify patients not at goal requiring further testing, education, or medical intervention. A process for gathering outside A1c test results improved the coordination of diabetes care across health care facilities. **Results:** Glycemic control as evidenced by the percentage of patients with most recent A1c test results <7% rose from 41% in second quarter of 2006 to 68.2% in third quarter of 2007 for the more than 800 patients with diabetes. **Conclusions:** To improve quality of care, provider awareness and support are essential in developing a comprehensive diabetes program. Increased provider awareness, supported by an EMR has built a team approach to education, medical management, and care coordination resulting in improved glycemic control.

Abstract PS1-42

Demonstrating the Effective Practice

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Background: For 160 years, government agencies, corporations, and nonprofit organizations have relied on demonstrations of radical innovations and interventions to stimulate interest in them and subsequent diffusion. Unfortunately, researchers and practitioners alike often fail to distinguish the functions that a demonstration project may serve and, thus, put into practice hybrid demonstration forms that typically under-achieve in all functional objectives. **Methods:** We (1) visited internal demonstrations of effective practices in primary care, palliative care, and population preventive services, (2) discussed the planning of demonstrations with national strategic support staff, and (3) reviewed the published literature about demonstration projects. **Results:** In Kaiser Permanente nationally, demonstration projects are often initiated without regard to functional specification, perceptions of potential adopters, communication training of demonstration staff, or knowledge of published literature about the operation of demonstration projects. **Conclusions:** The potential for improving the internal demonstration of effective practices in integrated healthcare delivery systems is large. Cost-effective strategies exist to improve the decision making of potential

adopters, as well as accelerate the dissemination of effective practices through formative evaluation about the credibility of potential adopters, potential adopters' perceptions of practices to be demonstrated, staff training, and implementation support.

Abstract PS1-44

Using Fault Tree Analysis and Probabilistic Risk Assessment to Improve Medication Safety in Ambulatory Care

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Background: In a previous study of adverse drug events (ADEs) in the ambulatory setting, we found that 42% of the serious, life-threatening, and fatal ADEs were preventable. We identified 7 types of errors in medication prescribing and monitoring that were the proximal causes of these events: 1) prescribing a medication for which the patient has a history of allergy, 2) a medication that conflicts with recent laboratory values or the patient's medical conditions, 3) a medication that interacts with other medications the patient is taking or 4) an excessive dose, 5) inadequate monitoring or 6) not acting on the results of monitoring, or 7) the patient does not use prophylaxis for known side effects of the medication. The aim of this study is to assess the feasibility of applying fault tree analysis and probabilistic risk assessment to the analysis of errors contributing to ADEs. **Methods:** We applied probabilistic risk assessment techniques borrowed from the safety engineering industry to identify system-level interventions for reducing the rate of ADEs. Interdisciplinary clinical including primary care and specialist physicians, advanced practice nurses, nurse managers, and pharmacists were convened to construct fault trees (graphic representations of events contributing to an undesired outcome) for the 7 types of errors in prescribing and monitoring medications. We are using probabilistic risk assessment software (SAPHIRE) to evaluate the fault trees, develop cut-sets, and identify and analyze potential system-level interventions to prevent ADEs. **Results:** Participants learned to develop complex and thorough fault trees with little difficulty. The clinicians quickly became comfortable detailing the systemic and individual processes that lay behind serious medication errors. The fault trees reveal an array of opportunities to implement interventions with a high probability of improving patient safety. **Conclusions:** Techniques for risk reduction from industry appear to be of value in assessing and improving safety problems related to medication prescribing and monitoring.

Abstract PS1-45

The Johns Hopkins Hospital at Home Care for Acutely Ill Older Persons: A Model for Managed Care

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Background: Acute hospital care of older patients is often associated with adverse events including functional decline, iatrogenic illness, dissatisfaction with care among patients and family members, family stress related to caring for a family member, and high costs. Delivering acute medical care at home in a hospital at home (HaH) that substitutes for traditional acute hospital care may be associated with better outcomes in these domains. **Aim:** Describe results of a national demonstration study of a HaH model of care in Medicare managed care and Veterans Administration (VA) settings. **Methods:** Prospective, nonrandomized clinical trial, in which acutely ill older persons (age >65) who met required hospital level care for community-acquired pneumonia, congestive heart failure, chronic obstructive pulmonary disease, and cellulitis were followed through their usual hospital course during an observation phase (n=286) and were offered HaH care during an intervention phase (n=141). The study populations were from three Medicare managed

care plans and one VA medical center. **Results:** Subjects in the study groups had similar baseline demographic and health characteristics. Sixty percent of patients offered HaH care opted for it (n=84). Patients in HaH received types of treatments associated with hospital care. Length of stay was shorter for patients in HaH, 3.2 vs. 4.9 d, ($P=0.001$). Patients cared for in HaH had reduced risk of clinical complications including incident delirium, adjusted odds ratio 0.26 (0.12, 0.57) and use of sedative medications, adjusted odds ratio 0.49 (0.30, 0.81). HaH care was associated with trends towards better physical functional outcomes. Illness-specific quality of care standards were met in similar proportions in HaH and hospital-treated groups. Patient and caregiver satisfaction with HaH was better than that associated with hospital care across multiple domains ($P<0.001$). Family members of HaH patients experienced significantly less stress related to the caring for an acutely ill family member during the HaH episode compared with patients treated in the hospital ($P<0.001$). Costs of HaH care were lower for HaH patients. **Conclusions:** HaH is an efficacious model of acute care delivery for selected older persons with certain medical illnesses. Dissemination of the HaH model into managed care settings is warranted.

Abstract PS1-48

A Team Approach to Improving Post Hip Fracture Care

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Background: Patients over the age of 50 sustaining hip fractures by falling only from a standing height are at high risk for osteoporosis and recurrent fracture. Unfortunately, this group frequently leaves the hospital without any therapy to prevent future fractures. A previous survey of 183 hip fracture patients reviewed discharges for the years 1998-2000 at Scott & White Memorial Hospital and revealed an area of concern. Of this group only 48 subjects (26%) had a prior diagnosis of osteoporosis, but only 34 (19%) received bisphosphonates and 29 (16%) received hormone replacement therapy sometime during the 1 year follow-up period. This abstract describes the results of an initiative to increase the therapeutic interventions for osteoporosis in the post hip fracture patients at the Scott & White facility of the Texas A&M Health Science Center. **Methods:** A clinical database was established at Scott and White to track this population. The endocrinology and orthopedic areas agreed to add calcium supplements (1500 mg daily) containing vitamin D (400 IU daily), a DEXA scan request and a consult with endocrinology to the hospital discharge orders in appropriate patients. Three hundred fifty-five patients were enrolled in the database between September 2004 and June 2006. One hundred sixty-six patients who were followed for at least 6 months and who qualified for osteoporosis medication were used for the analysis. **Results:** Thirty-six (26.3%) patients used calcium supplements with vitamin D before their fracture compared to 91 (66.43%) of patients at follow-up ($P<0.001$). Seventeen subjects (12.41%) were taking bisphosphonates before their fracture and the number increased to 66 (48.18%) after the treatment intervention. Eighty-two patients (49.6%, $P<0.001$) kept the appointment for the DEXA scan and 54 (32.5 %) saw the endocrinologist. **Conclusions:** The addition of calcium supplement with vitamin D to the hospital discharge medications was an effective and cost efficient method of improving treatment and enhancing compliance over the study period. Providing the opportunity for a routine endocrinology outpatient consultation after hip fracture increased the treatment of osteoporosis with effective bone active medication; however, many of the patients did not attend the consult.

Abstract PS1-49

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

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Background/Aims: To use grant funding resulting from lawsuit settlement funds from off-label marketing of Neurontin® to develop, implement, and evaluate a web-based curriculum on drug marketing and prescribing, and to revise the material using evaluation data from a live pilot session. The final revised curriculum will be made available to prescribers in the public domain. **Methods:** Content and education experts developed an educational

course entitled 'Optimal Prescribing,' which consisted of five modules of slides, video clips, narration, cases, interviews, and interactive slides. The course was presented to physicians, physician assistants, and nurse practitioners from the Lovelace Health System in Albuquerque, New Mexico, in a live 5-hour workshop. Data were collected using an audience response system, a pretest and posttest, a written evaluation form, and staff observations. These data were analyzed and summarized to revise the material to produce web-based modules for use by prescribers in the public domain. In addition to the live pilot evaluation, these prescribers and a control group of providers who did not attend the pilot course will be surveyed to assess the impact of the education on attitudes about relationships with industry representatives, the amount and source of information that guide prescribing decisions, and self-reported changes in prescribing patterns. **Results:** Twenty-five prescribers participated in the live pilot session on June 23, 2007. From the analysis of the data, it is clear that the materials must be reduced in length and tied to very clear learning objectives in order for future users of the material to be motivated to complete the course. The longer the module in the pilot session, the less engaged the learners were. The learners expressed a need for more information on interpreting research studies and performing calculations such as the number needed to treat/harm. The learners valued a checklist of information needed to make informed prescribing decisions and lists of balanced sources of information. The 6 month post-pilot survey is being prepared and results will be available by March 2008. **Conclusions:** To make this curriculum more useful to prescribers, it must be simplified in format and content, while preserving and enhancing the key insights of the curriculum. Subsequent evaluation will include the self-reported effect on prescribing and attitudes toward industry influence on prescribing decisions.

Abstract PS1-50

Format Change of Computerized Test Order Form Affects Physician Behavior

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Background: Inappropriate use of laboratory diagnostic tests lowers quality and raises costs of care. Our study was designed to find whether a reduction in testing could be obtained by the simple strategy of changing the set-up of the check-box laboratory order form that is embedded in a computerized medical record. **Methods:** A prospective intervention study was carried out at Maccabi Healthcare Services (MHS), an Israeli HMO that has used a computerized medical record since 1992. The MHS central data repository retains complete historical records of patient demographic data, physician data, laboratory results, using the patient's unique national identification number. In May 2005 we changed the order form and reduced the number of tests that can be ordered from 51 to 26 using a check-box form. Twenty-seven tests were removed from the form and two tests were added. Changes in physician's test ordering were then studied. **Results:** While tests that were added or retained on the computerized laboratory order form showed an increase of 17% and 64% in number of tests ordered per visit compared to the period prior to intervention, tests that were removed showed a reduction of 7% in test ordering and a further reduction of 28% in the subsequent year. **Conclusions:** Changes in format of laboratory test order forms may be a powerful tool to improve appropriateness of testing. A thoughtfully built test ordering form can save unnecessary tests and can reinforce clinical guidelines for the performance of some preventive testing and follow-up. Electronic health records can be utilized for implementing policy.