Abstract C-C3-04

Changing Prescriber Behavior Using Academic Detailing and Computerized Decision Support

Steven R. Simon, MD, MPH, *Harvard Pilgrim Health Care*; Robert J. Fortuna, MD, *Harvard Pilgrim Health Care*; Francis X. Campion, MD, FACP, *Harvard Vanguard Medical Associates*; Adrianne C. Feldstein, MD, *Kaiser Permanente Northwest*; David H. Smith, PhD, *Kaiser Permanente Northwest*; Marvin Packer, MD, *Harvard Vanguard Medical Associates*; Brent Cerullo, *Harvard Vanguard Medical Associates*; Fang Zhang, PhD, *Harvard Pilgrim Health Care*; Dennis Ross-Degnan, ScD, *Harvard Pilgrim Health Care*; Jonathan A. Finkelstein, MD, MPH, *Harvard Pilgrim Health Care*

Background/Aims: Harvard Pilgrim Health Care (HPHC) is one of 28 Attorney General Consumer and Prescriber Grant Program grantees. Four HMORN CERTs sites, including HPHC, received grants. An overall goal of the Program is to identify best practices for educating clinicians about the influences on their prescribing and for changing their prescribing behaviors. At HPHC, our aim was to test the effectiveness of computerized clinical decision support (alerts), alone and in combination with group academic detailing, to reduce the use of heavily marketed hypnotic medications at Harvard Vanguard Medical Associates (HVMA), a 14-site group practice that uses the Epic electronic health record. **Methods:** We randomly allocated the 14 practices to three study groups: (1) Alerts Only (n=5 practices), (2) Alerts plus Detailing (n=5), and (3) Usual Care (n=4). Internal medicine clinicians in both the Alerts groups received prescribing alerts when initiating new prescriptions for eszopiclone (Lunesta), zaleplon (Sonata), ramelteon (Rozerem), and controlled-release zolpidem (Ambien CR) between March and December 2007. We carried out group academic detailing sessions in June and July 2007 followed by an educational mailing in the fall. **Results:** A pre-planned interim data analysis (August 2007) demonstrated that hypnotic study alerts were triggered on 98 separate occasions. After receiving an alert, 30% (95% CI, 21%-40%) of clinicians changed the prescription to an alternative recommended medication. We plan to extract post-intervention data in January 2008 and will present findings of the intervention at the HMORN meeting. In addition, we carried out pre-intervention and post-intervention surveys of all clinicians at HVMA in 2006 and 2007 which assessed clinicians' perceptions of the influences on their prescribing, with special attention to the role of direct-to-consumer marketing. We will present the results of these surveys, as well. **Conclusions:** Developing interventions using health information technology and group detailing to improve the use of medications is a high priority for many HMORN organizations. The results of this study should be generalizable to many HMORN sites, including but not limited to the many organizations that have deployed the Epic electronic health record.

Abstract C-C3-05

Electronic Support for Public Health (ESP): Automated Detection and Reporting of Notifiable Conditions

Michael Klompas, MD, MPH, *Harvard Pilgrim Health Care*; Ross Lazarus, MBBS, MPH, *Channing Laboratory, Brigham and Women's Hospital*; Gillian A. Haney, MPH, *Massachusetts Department of Public Health*; Xuanlin Hou, MSc, *Channing Laboratory, Brigham and Women's Hospital*; Dumas William, RN, *Massachusetts Department of Public Health*; Francis X. Campion, MD, *Atrius Health*; Benjamin A. Kruskal, PhD, *Atrius Health*; Alfred DeMaria, MD, *Massachusetts Department of Public Health*; Richard Platt, MD, MSc, *Harvard Pilgrim Health Care and Harvard Medical School*

Background: Legislation and good citizenship compel practitioners to report key diagnoses that affect the public good. Public health reporting, however, is frequently paper-based, incomplete, lacking key details, and delayed. We sought to leverage electronic medical record (EMR) systems to automate the detection and reporting of notifiable diseases to a health department. **Methods:** The Electronic Support for Public Health (ESP) system consists of an independent server within the central data processing center of Atrius Health, a large multisite medical practice with over 600,000 patients. The server is populated by nightly extracts generated by Atrius Health's Epic Care EMR. The extracts contain codified data on every patient encounter from the preceding 24 hours including demographics, diagnoses, lab orders, lab results, vital signs, vaccinations, and prescriptions. Relevant codes are mapped to standard nomenclatures. EMR data on the server is analyzed using novel algorithms to detect patients with notifiable conditions. When a patient is identified, an HL7 electronic message is securely transmitted to the state health department. The ESP server is deliberately decoupled from the source EMR in order to minimize interference with clinical computing, ease modification of case-detection algorithms, and permit compatibility with different proprietary EMR systems. The number and completeness of electronic case reports are compared to concurrent, conventional, paper-based reports. **Results:** ESP has been operational since January 2007 and has reported 1121 cases of chlamydia, 146 cases of gonorrhea, 25 cases of pelvic inflammatory diseases, and five cases of acute hepatitis A. Comparison with ongoing traditional reporting shows a 44% increase in the number of chlamydia and gonorrhea cases reported. ESP includes treatment details on 100% of reports versus 88% of manual reports and has noted 86 cases of concurrent pregnancy versus five in paper reports. Algorithms to detect additional disease are being validated. **Conclusions:** Automated analysis of electronic medical record data can increase the number, clinical detail, and accuracy of notifiable disease reporting. The architecture pioneered for this system can potentially support additional public health objectives such as novel vaccine or medication adverse event detection and reporting. Collaborators are invited to help refine the system and test implementation in a new site.

Abstract C-D2-01

The Use of Computerized Medical Records to Investigate the Association Between Diabetes and End Stage Renal Failure

Varda Shalev, MD, MHA, *Maccabi Healthcare Services*; Gabriel Chodick, PhD, *Maccabi Healthcare Services, Sackler Faculty of Medicine, Tel Aviv University, Tel Aviv, Israel*; Ehud Kokia, MD, *Maccabi Healthcare Services*; Anthony D. Heymann, MD, BSc, MB, BS, MRCGP, MHA, *Maccabi Healthcare Services, Sackler Faculty of Medicine, Tel Aviv University, Tel Aviv, Israel*

Background: In many countries diabetes-mellitus (DM) is a leading cause for end-stage renal-failure (ESRF). The objective of the current study is to demonstrate the use of computerized medical records to describe the association between the prevalence of ESRF patient needing dialysis and DM by using data from both types of patient populations. **Methods:** Data from an Israeli HMO were used to identify 57,030 DM-patients and 647 ESRF-patients. Nearly one-third (30.8%) of the ESRF patients had DM. **Results:** ESRF-patients <35 years had a 45-fold higher prevalence of DM compared to the general population. Overall, ESRF women had a weighted prevalence rate of 3.11 (95% CI, 2.63-3.68) for diabetes; a significantly lower prevalence rate of 2.03 was calculated for men (95% CI, 1.75-2.36; *P*<0.05). **Conclusions:** The present study demonstrates the potential of harnessing large computerized medical databases to provide epidemiological data about the association of important chronic diseases which can be used to explore and improve the quality of disease management of DM and ESRF patients, and for health service planning and research.

Abstract C-D2-03

Family Health History: New Standards and Enhanced Utility for a Valuable Preventive Tool

Mary Beth Bigley, DrPH, MSN, *Office of the US Surgeon General, Health and Human Services*; Feero Greg, MD, PhD, *National Human Genome Research Institute, National Institutes of Health*; Downing Gregory, MD, PhD, *Personalized Health Care Initiative, Health and Human Services*

Background: Family health history (FH) is an underutilized tool in healthcare and could play a central role in enhancing the use of preventive services for a variety of disorders of major public health importance. Existing clinical prevention guidelines for screening and management of disorders incorporate FH information. Unfortunately, obtaining a FH is time-consuming and many primary care providers are insufficiently trained to effectively interpret the information they obtain. Studies show that clinicians often neglect FH in the context of healthcare visits. A potential solution would be the development and widespread adoption of interoperable health information technology (HIT) systems that facilitate patient entry of FH information and provide automated clinical decision support for