

C-B3-04:

### Medication Adherence, Rehospitalization and ER Visits Following Hospitalization for Members of a Medicare Cost-Contract HMO

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**Background/Aim:** Patient engagement in healthcare is potentially important for moderating risks for adverse events and rehospitalization during hospital-to-home transitions. However, little is known about whether patients' behaviors actually impact outcomes following hospital discharge. The aim of this study was to describe the impact of medication adherence on risk for rehospitalization and ER visits following hospitalization for Medicare beneficiaries enrolled in a Medicare cost contract HMO offered by Scott & White Health Plan. **Methods:** Claims data from June 2006 to June 2008 were selected for all SeniorCare patients who had at least one hospitalization during 2007. The first hospitalization of the year was considered the index hospitalization. Medication adherence in the six months prior to index hospitalization was estimated using the Medication Possession Ratio (MPR). Time to rehospitalization and time to ER visit were calculated from the index hospitalization date of discharge to the event date or last follow-up date. **Results:** The analysis included 3,729 members with at least one hospitalization during 2007. Median age was 78 (range 27 – 105) and 57% of those patients were female. The cumulative incidence of rehospitalization at 6 months was 12.2% (95% confidence interval = 11.1%, 13.4%). The cumulative incidence of ER visits at 6 months was 21.2% (95% Confidence Interval = 19.8%, 22.7%). Median MPR in the six months prior to the index hospitalization was 0.85 (range 0.01 – 1) with 62% of patients with MPRs representative of “high” adherence to prescribed medications. Medication adherence was not significantly associated with rehospitalization or ER visits following hospitalization. **Conclusion:** Most guidelines and interventions for care transitions following hospitalization emphasize the important role of patient or family health behaviors, including medication adherence. No evidence was found that supports the hypothesis that history of adherence to medications is associated with a reduced risk for rehospitalization or ER use. Prospective studies of patient health behaviors during hospital transitions are needed to better understand the impact of patient health behaviors during the time following hospitalization.

**Keywords:** Patient behaviors, Medication adherence, Patient care transitions

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C-C4-01:

### Functional Magnetic Resonance Imaging (fMRI) and Diffusion Tensor Imaging (DTI): An Efficient, Non-invasive Alternative to Conventional Pre-surgical Planning in Neurosurgery

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**Background:** Neurosurgical intervention often requires pre-surgical or intra-operative planning/mapping techniques that are invasive. For example, prior to temporal lobectomy for intractable epilepsy, patients often undergo a WADA test which involves anesthetizing one hemisphere of the brain at a time to localize memory and language functions. For other neurosurgical cases, electrophysiological intra-operative mapping of the cortex is often used during tumor resections proximal to eloquent cortex, or for localization of specific cortex (i.e., motor) when placing neurostimulators (e.g., for pain management). Less common, but emerging as a noninvasive planning tool, fMRI was designated in three CPT codes for pre-surgical planning purposes. Here, we examined the effectiveness of fMRI and DTI by comparing fMRI data to WADA test results (for epilepsy patients) and electrophysiological recordings (for tumor resections and motor cortex stimulator placement). We

also examine the utility of DTI in the context of surgical intervention. **Methods:** We examined 8 intractable temporal lobe epilepsy (TLE) patients (5 males, 3 females; 6 left TLE, 2 right TLE) who underwent both WADA testing and fMRI language mapping for pre-surgical planning purposes, 1 tumor resection case in which the tumor was near the motor cortex and intra-operative electrophysiological mapping was employed, and 1 motor cortex neurostimulator case in which electrophysiological mapping was performed. All patients were enrolled in IRB-approved studies. fMRI data (language or motor) was obtained prior to surgical intervention and maps were used intra-operatively using BrainLab. **Results:** In all 8 epilepsy cases, language mapping data was concordant between fMRI and WADA test results. However, fMRI mapping allowed for discrete, focal localization of regions involved in language processes whereas WADA testing only delineated hemispheric dominance. In the tumor resection case, fMRI data was consistent with electrophysiological recordings obtained intra-operatively. Finally, fMRI data was used as the primary localization technique for the motor cortex neurostimulator, and confirmed with electrophysiological recordings. **Conclusions:** Here, we demonstrate the effectiveness of fMRI as a powerful pre-surgical planning tool that has the potential to replace invasive and costly conventional methods. fMRI maps can easily be uploaded and used intra-operatively during stereotactic neurosurgery for accurate localization of complex brain functions.

**Keywords:** Pre-surgical planning tools, Effectiveness of fMRI, Evaluation of WADA test

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C-C4-03:

### Teen Tobacco Use and Depression in Primary Care

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**Background/Aims:** Tobacco use is the number one cause of preventable morbidity and death in the nation. Despite the ever growing list of harmful effects associated with smoking, tobacco use is common among children and adolescents and approximately half who try smoking will progress to regular use and dependence. Of concern, the great progress achieved between 1997 and 2003 in reducing teen smoking has stalled with overall rates near 20%. There is only limited evidence of the effectiveness of smoking cessation interventions in teen populations, and the low probability that adolescents will stop smoking on their own highlights the importance of prevention and early detection. Depressive disorders occur in approximately one in five youth by age 18 and are associated with a broad range of negative effects on health, as well as academic and social functioning. **Methods:** We examined the association of smoking and depression in a large, diverse population of teens seeking primary care from 7 health care organizations in Los Angeles and Washington, D.C. Subjects and their parents were recruited from January, 2005 through March, 2006 to participate in the Teen Depression Awareness Project (TDAP). Among the 4722 teens eligible and interested in participation, 4529 completed a structured telephone interview which assessed depression using the Diagnostic Interview Schedule for Children and queried smoking status. **Results:** Smoking prevalence varied significantly among teens who scored “non-depressed,” “sub-threshold depressed,” and “depressed” (3.2%, 9.3%, and 15%, respectively). Multivariable analyses controlling for gender, race/ethnicity, age, BMI percentile, and health care site found that compared with non-depressed teens, teens with sub-threshold depression were almost three times as likely to smoke (OR=2.9, CI=1.6, 5.2) and depressed teens were more than 5 times as likely to smoke (OR=5.4, CI=3.4,8.7). Among teens who smoked, 25% suffered depressive symptoms. **Conclusions:** Primary care visits represent an important opportunity to identify teens at risk for and from depression and smoking. Effective treatments for smoking and depression need to address the co-occurrence and interaction of these serious threats to adolescent health.

**Keywords:** Teen tobacco usage, Smoking cessation in teen populations, Teen smoking and depression

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