Abstracts

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OBJECTIVES: To describe 10-year trends in patient, physician and prescribed medications during outpatient visits for pediatric attention-deficit/hyperactivity disorder (ADHD). METHODS: We identified all visits in children (3–18) with ADHD (ICD-9 314.00–314.01) from 1998–2007 utilizing two national probability samples: the National Ambulatory Medical Care Survey and the National Hospital Ambulatory Medical Care Survey. We excluded pre/post surgery visits for a final sample of 584,276 visits and then weighted these visits to be representative of the US (using SUDAAN software) before calculating frequencies to characterize trends in patient and practice factors, as well as ADHD medication utilization. RESULTS: Visits for ADHD in children increased from 7.9 to 15.3 million (93%) from 1998–2007. Across all years, ~73% of visits were made by males. Visits were frequently made by white children (68% in all years) with a trend of increasing visits by non-white children by 2006–2007 (13.0% in 1998–1999 to 20.1% by 2006–2007). Visits among pediatrics rose from 38.3% in 1998–1999 to 48.4% in 2006–2007 with a decrease in specialist visits (from 43.1% to 33.7% of all visits). Across all years, mono-therapy was the predominant medication prescription (>60%), although ~1/3rd of all visits did not note an ADHD medication. The use of methylphenidate mono-therapy dropped from 40.4% in 1998–1999 to 27.9% in 2006–2007. Dextroamphetamine mono-therapy rose from 19.3% to 28.7% from 1998–1999 to 2002–2003, but then fell to 22.3% by 2006–2007. The use of newer non-stimulant medications was apparent starting in 2002, but remained low (~10%) across the rest of the interval. CONCLUSIONS: Visits made by children with ADHD increased over the decade, while use of medications for ADHD, particularly stimulants, decreased by 2006–2007 with no corresponding increase in the use of newer non-stimulant agents. New therapeutic options, changing guidelines, and emerging safety concerns make this an important area for ongoing research.

MENTAL HEALTH – Conceptual Papers & Research on Methods

WEB-SURVEYS: REAL WORLD EVIDENCE GATHERING AND MINIMIZING UNCERTAINTY IN ECONOMIC MODELS
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OBJECTIVES: From a Canadian societal perspective, little is known about the impact of Attention Deficit Hyperactivity Disorder (ADHD) in adults. A methodology for the design and conduct of a web-based survey used to populate a Canadian economic model is described. METHODS: An IRB approved, web-based survey was administered to evaluate the impact of ADHD in pre-identified Canadian subjects with this condition. There were 3 subgroups of interest: an ADHD group with self-reported controlled symptoms, an ADHD group with self-reported uncontrolled symptoms, and a non-ADHD reference group. Eligible participants received a 28-item, self-administered questionnaire (in English or French) which evaluated socio-demographic characteristics, ADHD treatment, comorbidities, health care resource utilization, functional status (Sheehan Disability Scale), productivity (Work Productivity Assessment and Activity Impairment; WPAI), and health-related quality of life (EQ-5D). Validation rules were pre-programmed to optimize data quality and survey completion at the point of data entry. EQ-5D utilities and productivity losses from WPAI were used to inform an economic model. Other data were used as supportive information. RESULTS: The targeted number of completed questionnaires, n = 174, was reached within 2 weeks of study launch after 1,878 survey invitations were circulated. More specifically, 69 controlled, 70 uncontrolled and 35 non-ADHD subjects responded. Among participants, 56% were male, mean age was 35 years, 43% were diagnosed with ADHD in adulthood, and the majority responded in English. Functional status and utility values were significantly lower for subjects with uncontrolled versus controlled ADHD. Employment rates were lower (59% vs. 74%, p = 0.06), and overall work impairment was significantly higher for uncontrolled versus controlled ADHD subjects, respectively. CONCLUSIONS: Web-based surveys are a flexible and effective methodology for evidence gathering in support of economic evaluations. Despite some inherent limitations of online studies, such as generalizability, survey variables and outcomes can be tailored to collect data from populations and sub-groups of interest.

EXAMINATION OF DOCTORS’ PRACTICE AND PRESCRIBING PATTERNS TOWARD SELECTIVE SEROTONIN REUPTAKE INHIBITORS AND SEROTONIN-NOREPINEPHRINE REUPTAKE INHIBITORS
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OBJECTIVES: None of the published literature comparing outcomes measures between serotonin reuptake inhibitors (SRIs) and serotonin-norepinephrine reuptake inhibitors (SNRIs) control for doctors’ practice and prescribing patterns due to the limitations of claims databases. We showed how to derive doctors’ practice and prescribing patterns for this group of patients from U.S. claims data. METHODS:
Based on U.S. claims data, we assigned doctors’ IDs based on the physician who treated the enrollee for the longest period of time after eliminating any emergency room, laboratory, and radiology services. Physician prescribing patterns were then calculated from prescription drug records. Patients were grouped as generic SSRIs, non-generic SSRIs, and SNRIs. We showed that patients were more likely to be prescribed generic SSRIs relative to non-generic SSRIs if doctors’ prescribing patterns favored generic prescription (p = 0.000). Similarly, patients were less likely to be in the SNRI group if doctors’ prescribing patterns favored SNRI prescription (p = 0.000). CONCLUSIONS: Doctors’ prescribing patterns are important factors for decisions on treatment. Any outcomes models (compliance, or treatment effect on health care utilization and cost) should control for these patterns.

**TIME SERIES ANALYSIS TO EXAMINE THE EFFECT OF GUIDELINES**

**OBJECTIVES:** Application of a segmented times series model to measure the effect of guidelines on outcomes measures. METHODS: To isolate the effect of guidelines, we need to control for three different factors: 1) Baseline differences between the two groups, 2) Step-wise differences at the intervention point, and 3) Trend differences after the intervention. The segmented times series model was combined with the propensity score matching technique. The segmented time series model contained two predictor variables: the binary intervention variable and an interval coding for time. The kitchen sink approach was used for propensity score matching and the segmented time series model controlled for the confounding influence of any underlying trend. The final model ensured that any estimated change in the mean level of the series after intervention was not simply due to the ‘trend’. RESULTS: Using U.S. claims data, we analyzed the effect of the American Psychiatric Association’s consensus statement on glucose monitoring for patients on atypical antipsychotic drugs. Glucose screening rose 1% per quarter among antipsychotic-treated patients before release of the guidelines, compared to 0.3% per quarter after (p = 0.005 for trend). Monitoring rates were 16.07% before release of the guidelines and 18.76% after (p < 0.001). CONCLUSIONS: The segmented time series model can provide a clear picture about both trend and intervention effect when analyzing the effects of guidelines.

**AGREEMENT BETWEEN PATIENTS WITH MILD DEMENTIA AND CAREGIVERS ON THE PROMIS CAT MASURE OF PERCEIVED COGNITIVE FUNCTION**

**OBJECTIVES:** The PROMIS measure of Perceived Cognitive Function has gone through multiple cycles of development and validation testing, but has not been extensively tested in clinical settings, particularly among patients being treated for neurological conditions and/or cognitive deficits. We sought to do an initial examination of the extent to which patients being treated for mild dementia and their caregivers would agree in their assessment of patient cognitive function using the PROMIS PCF measure. METHODS: A total of 14 consecutive patients being seen in the Neuropsychiatric Outpatient clinic at Henry Ford Hospital for a diagnosis of dementia, as well as one adult caregiver per patient, were invited to complete the PROMIS Perceived Cognitive Function CAT measure in reference to the patient’s current level of cognitive function. Several analyses of agreement between caregiver and patient reports were conducted. RESULTS: All patients and all caregivers were able to successfully complete the PROMIS PCF measure. There was no significant difference between patients and caregivers in either raw mean score, mean T-score, or standard error for the measure. The score ranges for caregivers and patients were quite comparable. The Pearson correlation coefficients for association between patient and caregiver responses were .246 and .286 for raw score and t-score, respectively (both n.s.). CONCLUSIONS: The lack of significant difference between patients and caregivers on mean response suggests possible validity of the PCF measure for group-level analyses, but the relatively low correlations between patient and caregiver suggest caution about use of the measure at the individual patient level. The next step of analysis will involve comparison of patient PCF scores to scores on objective measures of cognitive function.

**MUSCULAR-SKELETAL DISORDERS – Clinical Outcomes Studies**

**ASSESSMENT OF COMORBIDITIES IN PATIENTS WITH RHEUMATOID ARTHRITIS (RA)—FINDINGS FROM A RETROSPECTIVE CLAIMS DATABASE ANALYSIS USING A PRE-PROGRAMMED DATA ANALYSIS TOOL**

**OBJECTIVES:** RA is a systemic disease resulting in comorbidities that affect quality of life, prognosis and outcomes. Comorbid illnesses can impact treatment, medical costs, disability and risk of mortality. Rheumatoid Arthritis Outcomes Analyzer, a validated claims data analysis tool with a user-friendly interface was used to characterize comorbidities in patients with RA. METHODS: The study included patients age 18 or older with at least 2 diagnoses of RA (ICD-9 CM 714.0X) ≥ 2 months apart between January 2005 and December 2007 from the HealthCore Integrated Research Database. RESULTS: Patients have received ≥ 2 one traditional (non-biologic) DMARD medication with RA diagnoses at least two months apart. All medical and pharmacy claims were entered into the final dataset. RESULTS: A total of 25,856 RA patients entered into the analysis (mean age = 56; 74.8% females). The overall mean Charlson Comorbidity Index (CCI) was 2.00 (SD = 1.43) and was higher for males (mean = 2.18; SD = 1.85) than females (mean = 1.94; SD = 1.53). In the 18 to 44 age group, females tended to have a higher CCI (mean = 1.38; SD = 0.91) than males (mean = 1.30; SD = 0.81). This trend reverses in older patients where the mean CCI in males in the 45 to 64 and 65 age groups is 1.90 (SD = 1.50) and 3.31 (SD = 2.39) respectively versus 1.76 (SD = 1.29) and 2.80 (SD = 2.07) in females. The most frequent comorbid conditions for all patients were: chronic pulmonary disease, diabetes, cerebrovascular disease, tumor, congestive heart failure, peripheral vascular disease and other disease. CONCLUSIONS: This analysis explores and differentiates the CCI by gender and age group in patients with RA using a validated claims data analysis tool. Further study will examine the relationship between comorbidity and health-related and cost outcomes.