

PSY31

TRANSFUSIONS IN PATIENTS WHO UNDERWENT OPEN SPINE FUSION VERSUS MINIMALLY INVASIVE SPINE FUSION BASED ON A PREMIER PERSPECTIVE® DATABASE SAMPLE

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OBJECTIVES: Transfusions are linked to adverse outcomes such as mortality, post-operative morbidity and increased costs. Patients who have undergone open spine surgery can experience high volume of blood loss and require transfusions due to the extensive muscle dissection associated with the procedure. Recently, there has been a focus on minimally invasive spine surgery techniques (MIS) that can minimize the exposure of tissue during spine surgery, which has resulted in the reduction of blood loss and related transfusions. **METHODS:** This retrospective study utilized the Premier Perspective® database to compare costs of transfusion between patients who underwent 1-2 level MIS posterior lumbar interbody fusion (n=727) and open spine fusion (n=727) matched based on age and gender. A regression model was used to assess the impact of factors that affected the likelihood of transfusion. **RESULTS:** Patients who underwent MIS surgery had significantly fewer transfusions of perioperative autologous blood (1.8% vs. 6.2%), packed cells (5% vs. 10%) and platelets (0% vs. 0.6%) when compared to open fusion (p<0.05). The per patient transfusion cost for MIS was \$252 lower than that of the open surgery. Per patient costs of antifibrinolytics, ESAs/hematinics and blood drainage were statistically lower for MIS fusion when compared to open fusion (p<0.05). The factors that were identified for the transfusion prediction model were surgery type, Charlson index, implanted screws, type/region of hospital, and type of insurance. The model showed that use of MIS fusion contributed most to the reduction in likelihood of transfusion when compared to the other variables (OR=0.441, p<0.0001). **CONCLUSIONS:** MIS fusion patients require fewer transfusions, thus resulting in lower mean transfusion costs when compared to open fusion patients. MIS fusion patients are less likely to receive a transfusion when compared to open fusion patients. A limitation was that pre-op Hct was excluded as a model variable, due to unavailability of data.

PSY32

HEALTH CARE RESOURCE UTILIZATION (HRU) AND COSTS ASSOCIATED WITH DISEASE ACTIVITY IN SYSTEMIC LUPUS ERYTHEMATOSUS (SLE): A RETROSPECTIVE OBSERVATIONAL COHORT ANALYSIS

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OBJECTIVES: To estimate the economic consequences of changes in disease activity on HRU and costs. **METHODS:** An observational cohort study of SLE patients who received care in a regional integrated health delivery system from January 2004 through March 2011 was conducted using medical and hospital electronic health records, medical chart review, and health plan claims. Eligible patients were ≥18 years old, had ≥1 rheumatologist-confirmed SLE diagnosis and ≥1 eligible rheumatology-encounters, i.e., SLE visits in rheumatology, nephrology or emergency department. Patients were continuously enrolled ≥90 days before and after the encounters. Charts were manually reviewed to estimate SLEDAI scores (SS). Average unit costs of each medical procedure, facility use, and per-unit prescription were estimated from a payer perspective from a third-party managed care claims database. HRU and costs were calculated for the 30-day period surrounding every SS date (10 before and 19 days after) and the entire period of health plan enrollment. Relationships between HRU/costs and SS were estimated using mixed-effect models. **RESULTS:** A total of 178 SLE patients were included; mean age was 50.6 years, 91% female, and 95.5% Caucasians. Patients had a total of 1343 encounters with valid SS (average observation period: 1,035 days). SLE patients incurred average annual costs of \$18,839. Reductions of SS were significantly associated with reductions in HRU and costs. SS reductions of 4 points were associated with 10% and 14% reductions of HRU and costs over a 30-day period; reductions of 8 points were associated with 19% and 26% reductions of HRU and cost; and reductions of 10 points were associated with 23% and 31% reductions of HRU and cost. Annualized, these changes of SS scores are associated with changes of \$5579 (SS change from 10 - 0), \$4624 (10-2), and \$2485 (10-6), respectively. **CONCLUSIONS:** Reductions in disease activity were associated with substantial reductions of HRU and costs.

PSY33

TOTAL COSTS OF CARE IN THE 90 DAYS FOLLOWING EMERGENCY DEPARTMENT VISITS FOR PATIENTS TAKING EXCLUSIVELY CLASS-II OR CLASS-III SHORT-ACTING OPIOIDS

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OBJECTIVES: Patients using opioids chronically may be especially costly to Accountable Care Organizations (ACOs) and their hospitals, partly because medication portfolios of these patients may be suboptimal. To better understand these patients, we leveraged hospital and claims data for patient level continuum of care analyses, focusing on chronically prescribed short-acting opioids without baseline long-acting opioids. **METHODS:** Using linked data from the Premier hospital database and Optum commercial claims, we selected patients chronically taking opioid pain medications who presented to an emergency department (ED) from 2006-2010. We focused on the subset who exclusively took short-acting opioid analgesics, comparing those using Schedule

C-II opioids to patients using only C-III opioids. We analyzed total inpatient and outpatient costs at intervals within the 90-day period following the ED visit. We used Medicare reimbursement for medical services and patient copays for medications. Bootstrap analyses with 1000 replications were performed adjusting for primary diagnoses plus 28 comorbid conditions. **RESULTS:** We identified 5,240 chronic opioid patients receiving exclusively short-acting C-II (SAC-2) opioids and 1,587 using only short-acting C-III (SAC-3) opioids. Within 72 hours of the ED visit, adjusted and unadjusted costs were higher for SAC-2 versus SAC-3 patients (\$2,411±4,023 vs. \$2,354±3,461; p<0.05). At 30, 45, 60, and 90 days, respectively, mean costs were higher for SAC-2 patients compared to SAC-3 patients (\$5,694±9,201 vs. \$4,561±8,069, \$7,244±11,580 vs. \$5,500±9,640, \$8,678±13,601 vs. \$6,369±11,120, and \$11,571±17,400 vs. \$7,938±13,736; all p<0.05). Adjusted mean differences were \$48, \$731¹, \$1,152², \$1,586³, and \$2,457⁴ (p<0.05) at 72 hours, 30 days, 45, 60, and 90 days. **CONCLUSIONS:** Total costs of care were higher for patients receiving only SAC-2 opioid analgesics than for patients receiving only SAC-3 opioids. This was consistent at all analyzed intervals of time within the 90 days following an ED visit. Further analyses of patients having other opioid medication portfolios may be warranted.

PSY34

EFFECT OF BODY MASS INDEX (BMI) ON YEARLY MEDICAL AND NON-MEDICAL COSTS IN AN EMPLOYEE POPULATION USING GENERALIZED ADDITIVE REGRESSION MODELS

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OBJECTIVES: The World Health Organization defines obesity as BMI≥30 and overweight as BMI≥25. While previous studies have shown these are associated with higher medical and non-medical costs, less is known about the continuous relationship between unit changes in BMI and cost. This study measures the impact of BMI as a continuous variable on several employee-related cost outcomes. **METHODS:** Using a retrospective database from 5 large employers throughout the US, employees' BMI values from 2003-2011 health risk appraisals were used as continuous variables in generalized additive regression models. All employees were required to have ≥12 months of health coverage post-index (first BMI measurement). Employees with pregnancy-related medical claims and those with BMI<18 or >47 were excluded. Medical and drug costs, sick leave (SL), short- and long-term disability (STD; LTD), workers' compensation (WC) costs, work absence days, and Health Productivity Questionnaire responses were measured 12 months post-index. Turnover was measured 12-18 months post-index. Models controlled for age, gender, marital status, race, salary, zip-code region, and index year. **RESULTS:** The study included 72,778 eligible employees; 32.4% were female. Average BMI, age and annual salary, were 27.3, 39.7 years and \$81,114, respectively. For each unit increase in BMI, significant changes (each P<0.0001) in annual costs (medical [\$97 per additional unit of BMI (at the mean)], drug [\$27], SL [\$14], STD [\$8], LTD [-\$1], WC [\$4]) and absence days (SL [0.072 days per additional unit of BMI (at the mean)], STD [0.018], LTD [-0.002], WC [0.013]) were found. Self-reported productivity also changed significantly (-0.0065 units per unit increase in BMI, P=0.0003). Turnover was non-significantly lower for higher levels of BMI. **CONCLUSIONS:** Employees with higher BMI levels are associated with significantly more costs, more absence from work, and lower self-reported productivity. Given their high prevalence, overweight and obesity represent a significant economic burden for US employers.

PSY35

BURDEN OF DISEASE ASSOCIATED WITH PSORIASIS IN COLOMBIA

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OBJECTIVES: Psoriasis is a chronic, inflammatory and autoimmune disease that occurs in the skin and causes flaking, swollen and pain. In Colombia there are no official reports on the disease burden of psoriasis. The aim of this study was to estimate the prevalence of psoriasis in Colombians (children and adults) and its associated costs in the private and public settings. **METHODS:** A meta-analysis was conducted with literature found through a systematic review in electronic databases (Pubmed, Health Star, PsycINFO, Embase, Science Direct, OVID, Cochrane Library Database, INBIOMED and LILACS) and informally published written material to extract data regarding epidemiological and risk factors about psoriasis in Colombia. Twelve papers were included in the meta-analysis. The information was validated through a panel of eight local experts. Institutional costs (taken from 7 private and 10 public health care centers in Bogota, Colombia) were used to estimate direct medical costs, complication resource use and treatment schedules were given by experts. Indirect costs were calculated considering disability length (labor days lost) generated by the disease. Costs are expressed in 2012 USD. **RESULTS:** The prevalence of psoriasis in the Colombian population estimated for 2012 was 2.0% (0.0062-0.0340) (n=959,971). The most common presentation of psoriasis was: plaque (64.29%), followed by guttate (12.86%) and erythrodermic (2%). Most risk factors identified for psoriasis were smoking (40.71%); alcohol intake (29.29%) and medication use (23.57%). Total annual costs per patient (direct + indirect costs) associated with psoriasis treatment were: US\$12,594.65 for private practice and US\$10,894.92 for the public scenario. **CONCLUSIONS:** Psoriasis prevalence in Colombia is similar to those reported in latinamerican countries (1.7% - 2.2%). From a societal perspective, psoriasis represents a major economic burden for the local health system due to prevalence and cost per patient/year. Total annual costs per patient were US\$1,699.73 higher in private than in the public scenario.