lines informing the use of UDM, there appears to be a general consensus among practitioners that utilize UDM on: which patients to monitor, how often to monitor, and which substances are most important to detect.

MEDICAL DEVICE/DIAGNOSTICS – Research on Methods

PMD55 PREDICTIVE ACCURACY OF METHODS FOR IDENTIFYING PATIENTS RECEIVING PERITONEAL DIALYSIS AND HEMODIALYSIS USING HEALTH CARE ADMINISTRATIVE DATA

Tanoe CJ1, Berger A1, Lamerato L2, Ingersoll G1, Slaad JA3, Abbott G3, Sheehan MP1, Oster G1

1Policy Analysis Inc. (PAI), Brookline, MA, USA, 2Henry Ford Health System, Detroit, MI, USA, 3Baxter Healthcare Corporation, McGaw Park, IL, USA

OBJECTIVES: To estimate the predictive accuracy of methods used to identify patients receiving peritoneal dialysis (PD) and hemodialysis (HD) in healthcare administrative data for receipt of PD and HD.

RESULTS: We identified a total of 233 patients with ESRD and one or more healthcare encounters with dialysis-related procedures and diagnosis codes. Of these, 43 had codes suggesting receipt of PD, and 173 had codes suggesting receipt of HD. Dialysis modality could not be determined for the remaining 17 patients. PPV of PD-related codes for identifying patients receiving PD within 30 days of anchor date was 86.7%, it was 90.8% within 90 days of anchor date, and 93.1% within 180 days of this date.

CONCLUSIONS: While HD-related procedure and diagnosis codes appear to have relatively high predictive accuracy for identifying patients receiving HD, predictive accuracy of the codes used to identify patients receiving PD is much lower.

PMD56 USING ADVANCED HEALTH CARE DATA ANALYTICS TO IDENTIFY AND CHARACTERIZE CENTRAL VENOUS CATHETERIZATION EPISODES VIA ELECTRONIC HEALTH RECORDS IN THE VETERANS AFFAIRS

Durval SL1, Kamauu AWC2, Sauer BC1

1VA Salt Lake City Healthcare System, Salt Lake City, UT, USA, 2Anolins LLC, Bountiful, UT, USA

OBJECTIVES: Observational health care data are often used to study patient populations and outcomes of interest. Electronic Health Record (EHR) data provide a granular and longitudinal look at patient care; however, much information is buried within the narrative text of clinical notes and is not typically available for research. Diagnosis and procedure codes pose two difficulties when identifying central venous catheterization (CVC) episodes: (1) they are not always documented in the EHR, (2) they are associated with the encounter and not the actual CVC event. METHODS: We applied advanced healthcare data analytics with natural language processing (NLP) to extract meaningful information about patient care from text clinical information in the Veteran Affairs nationwide EHR database. The NLP was designed to help identify and characterize CVC episodes for patients with an inpatient encounter. Patients were characterized as having (a) a billing code for catheter insertion and (b) having had a chest x-ray during an inpatient encounter where the presence of a CVC was identified by NLP. RESULTS: 1.2M patients with an inpatient encounter were found in the VA between January 1, 2006–December 31, 2010. Of them, 54,676 patients were identified as having at least one inpatient CVC episode using billing codes. 119,768 additional patients were preliminarily identified via NLP, resulting in a total of 174,444 CVC patients. CONCLUSIONS: Fifteen percent of inpatients had a CVC placed and 68% of CVC patients were only identified via NLP. These rates are consistent with previously published literature. This work shows that NLP provides a CVC placed and 68% of CVC patients were only identified via NLP. These rates are consistent with previously published literature. This work shows that NLP provides a
OBJECTIVES: Diagnosing Appendicitis is a difficult challenge for emergency department (ED) physicians. It has been the subject of much research because no diagnostic tool of quality and applicability in the clinical routine has not yet been identified. We constructed a clinical predictive model for Appendicitis using a Bayesian network, using a decision analysis approach.

METHODS: We designed a method to construct decision models to support the process of clinical diagnosis, which was applied specifically to the diagnosis of Appendicitis. The methodology starts with a multiple correspondence analysis (MCA) for the selected variables with the highest power of discrimination, based on which an initial Bayesian network is proposed. This network was refined with the support of a group of medical experts in the diagnosis, to define the final structure of the Bayesian network. Finally, the model is validated through cross-validation method. For validation we used Sanabria, Bermudez, Dominguez and Serna’s (2007) database, which consists of 349 patients with suspected Appendicitis. Results: A total of 174 patients with an average age of 63.8 (SD 10.2, 41-85) years were included in the study; 63% (105) were female and 56% (98) were obese. 75% of the patient population was discharged in n = 3 days. Unadjusted analysis identified those with diabetes, hypertension, obesity (BMI >30 kg/m2), chronic back pain (CRP), insomnia, cancer, osteoporosis), on patient LOS after elective TKA. Unadjusted and adjusted odds ratios (OR) of having a LOS >3 days were calculated for each comorbidity. Logistic regression analysis, ORs were adjusted for age, gender, pre-operative physical/mental health and preoperative level of physical activity.

RESULTS: A total of 174 patients with an average age of 63.8 (SD 10.2, 41-85) years were included in the study; 63% (105) were female and 56% (98) were obese. 75% of the patient population was discharged in n = 3 days. Unadjusted analysis identified those with diabetes, hypertension, obesity (BMI >30 kg/m2), chronic back pain (CRP), insomnia, cancer, osteoporosis), on patient LOS after elective TKA. Unadjusted and adjusted odds ratios (OR) of having a LOS >3 days were calculated for each comorbidity. Logistic regression analysis, ORs were adjusted for age, gender, pre-operative physical/mental health and preoperative level of physical activity.

CONCLUSIONS: Few studies have focused on specific comorbidities that influence LOS. We found that preoperative diagnosis of osteoporosis or cancer increased the LOS following elective TKA. Previous determinants, age, gender, pre-operative physical/mental health and preoperative level of physical activity, preparative and physical health were not influential.

PSU3 ANALYSIS OF BARIATRIC OUTCOMES LONGITUDINAL DATABASE (BOLD) TO PREDICT PERCENT BMI LOSS AFTER BARIATRIC SURGERY

Gonzalez M1,2,3, Francis DM1,2, Hunter TD3

1University of Cincinnati Metabolic Disease Institute, Cincinnati, OH, USA, 2Ethicon Endo-Surgery, Inc., Cincinnati, OH, USA, 3S2 Statistical Solutions, Inc., Cincinnati, OH, USA

OBJECTIVES: The objective of this study was to utilize the BOLD database to analyze the percent BMI loss after bariatric surgery. Of particular interest was the determination of predictors to help explain the large variation in bariatric surgery success.

METHODS: The dataset extracted for analysis consisted of patients age 21 or older having their first bariatric surgery (laparoscopic adjustable gastric band [LAGB], Roux-in-y gastric bypass [RYGB], or vertical sleeve gastrectomy [VSG]) between January 1, 2007 and February 26, 2010, with pre-surgery BMI of at least 30, a baseline visit and at least one postoperative visit. Subpopulations with postopera-