and 0.0032 for obese men. Using overweight men as an example, the risk of death in this group is about 2.5% higher than that of non-obese men and increased with age and BMI. CONCLUSIONS: Our results showed that women had a higher risk of diabetes but a lower risk of death for both diabetics and non-diabetics than men. Moreover, both risks increased with BMI and age: This joint estimation of the transition probabilities in the Markov model overcome the problem of negative probabilities resulting from separate estimations.

PRM56

TREE-BASED ALGORITHM FOR MEASURING PRE-TREATMENT QUALITY OF CARE IN MEDICARE DISABLED HEPATITIS C PATIENTS

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OBJECTIVES: To develop quality of care (QC) metrics using claims data in hepatitis C (HCV) patients with disability, a parable population facing significant access barriers and representing the majority of HVC patients in Medicare, and quantify metrics’ correlation with treatment receipt. METHODS: We adapted 14 Veterans Affairs-developed quality metrics (QMs) for measurement in a cohort of 1,936 disabled HCV patients (2006-2009) with 6 months continuous Medicare parts A, B, D enrollment before diagnosis and no previous treatment. Based on the machine-learning principle of recursive partitioning, the proposed algorithm implements a random forest model of conditional inference trees, identifies the forest’s representative tree, and aggregates its terminal nodes into QC patient groups. Using linked county-level data from the Area Health Resource Files, we compared contextual characteristics across QC groups. RESULTS: On average, 10.4% received peg-interferon or ribavirin, the largest predictor of treatment receipt. Factors that increased treatment receipt, “HCV genotype testing,” “visit to specialist,” “confirmation of HCV viremia,” and “iron overload testing.” High QC (n=360; treated=-33.3%) was defined for patients whol did not reach the above mentioned metrics. Good QC patients (n=302; treated=-12.3%) had either “HCV genotype testing” or “visit to specialist,” while fair QC patients (n=282; treated=-7.1%) only had “confirmation of viremia.” Patients in the low QC (n=192) model structure, built with 15 QMs. The accuracy of algorithm predicting treatment was 70% sensitivity and 78% specificity. Compared to those with fair or low QC, more high and good QC patients lived in rural or small town areas with lower access to specialized hospital and physician services and lower rates of mortality and education. CONCLUSIONS: Higher quality of care correlated with higher treatment rates. Limited healthcare access among Medicare disabled patients with HCV was not associated with lower quality. Future research is needed to assess pre-treatment QM with newer HCV therapies.

PRM57

COST-EFFECTIVENESS EVALUATION OF GENOTYPE-GUIDED ANTIPATELET THERAPY VERSUS UNIVERSAL NEW ANTIPATELET THERAPY IN PATIENTS WITH ACUTE CORONARY SYNDROME

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OBJECTIVES: Polymorphism of CYP2C19 affects metabolism and drug response of clopidogrel. New antipatelet drugs such as prasugrel and ticagrelor are not affected by CYP2C19 polymorphism. CYP2C19 genetic testing could guide the selection of clopidogrel (antipatelet agent) genotype-guided therapy, to improve cost-effectiveness analyses of universal prasugrel or ticagrelor treatment versus genotype-guided therapy for patients with acute coronary syndrome (ACS) and planned coronary interventions. We have previously studied the cost-effectiveness of antipatelet therapy in ACS patients by using the Markov model. GENO: We aimed to evaluate the cost-effectiveness of the new class of antipatelet drugs versus genotype-guided therapy. METHODS: A lifelong Markov model was developed to compare universal new antipatelet drugs treatment and genotype-guided therapy from the perspective of healthcare provider in genotype-guided therapy arm, patients without CYP2C19 loss-of-function (LOF) allele would receive generic clopidogrel, while patients with at least one LOF allele would receive a new antipatelet agent. All clinical inputs were derived from published meta-analysis and clinical trials. Direct medical costs and quality-adjusted life-year (QALY) gained were the primary model outcomes. RESULTS: Base-case results showed that genotype-guided therapy cost $73,131 with 8,068 QALYs, while universal new antipatelet therapy cost $79,179 with 7,946 QALYs. With a threshold of willingness-to-pay of $50,000 per QALY, no threshold values were identified in one-way sensitivity analysis. The most influential factor was the probability of ischemic heart disease (IHD) state turned to death, followed by the possibility of post myocardial infarction state turned to death, cost of PCI and utility of IHD. In probabilistic sensitivity analysis, genotype-guided therapy was dominant with $6192 (95% CI 6170-6214) compared with universal new antipatelet therapy. CONCLUSIONS: Compared with universal use of new antipatelet drugs, genotype-guided therapy seems to be a less costly and more effective clinical strategy for patients with ACS undergoing PCI.

PRM59

REAL-WORLD DATA UTILITY FOR HEALTH ECONOMIC MODELING: AN ASSESSMENT OF CURRENT DATA SOURCES

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OBJECTIVES: While cost estimates are the foundation of health economic models, they are often based on a limited number of sources. The purpose of our study was to assess the utility of real-world data sources in the United States for use in health economic models. METHODS: Real-world data sources were identified and assessed in the study. Four usable electronic medical record (EMR) datasets, 11 state-level all payer claims databases (APCDs) and data from the Healthcare Cost and Utilization Project (HCUP). Factors assessed included coverage of national or regional population, inclusion of various sites of care, free/public access, and availability of longitudinal patient-level data on utilization and outcomes. Each factor was rated by three independent reviewers on a scale from 1 to 5, with 1 being limited use in economic modeling and 5 being highly useful for health economic modeling. Ratings were summed for each reviewer and averaged to produce a score out of 20 possible points. RESULTS: Of the 14 real-world data sets assessed for utility in health economic modeling, claims data rated highest (15 of 20) due to the availability of patient-level data from multiple sites of care and lack between a utilization and patient outcomes. Despite the availability of patient outcomes associated with utilization with EMR data, the data set was the lowest (27 out of 20) due to the lack of nationally representative data and propensity access. CONCLUSIONS: Of the currently available real-world data sets, claims data was viewed as most useful for health economic models because they include patient-level utilization data from multiple sites of care. Data mined from EMR represents a significant opportunity to develop future utilizations, but currently available EMR data lacks national representation and is expensive to obtain.

PRM60

A NEW COST-EFFECTIVENESS FRAMEWORK FOR MODELING PSORIASIS TREATMENTS

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OBJECTIVES: As more psoriasis treatments come to market in both new and existing drug classes, health care payers will need assistance in determining the most cost-effective regimen or sequence of regimens to control budgets. We sought to devise a cost-effectiveness modeling structure that will aid in decision making by highlighting differentiating factors between drugs and meet the changing needs of payers. METHODS: A systematic literature review was conducted to identify pertinent economic analyses of cost-effectiveness, to determine the dominant strategy for patients with psoriasis. As part of this review, we identified manufacturer submissions to health technology assessment (HTA) bodies and HTA responses/critiques of the submissions. The review showed that many previous models focused on one line of biologic therapy followed by standard of care. Additionally, Psoriasis Area Severity Index (PASI) response was limited in respect to both time periods considered and the categories of response modeled. RESULTS: We have developed a new cost-effectiveness modeling strategy by allowing a sequence of therapies (two lines of biologic therapies followed by standard of care). A short-term decision tree allows for a clinical determination of PASI response at 12 or 16 weeks post-initiation of therapy. Within the initial 12 or 16 week treatment period, we model the change in PASI levels over time to better reflect quality of life for patients on treatments with better speed of response. Following the decision tree, patients enter a semi-Markov (semi-Markov due to time dependent death probabilities) to estimate long-term costs and outcomes. As new drugs allow some patients to achieve complete psoriasis clearance, we included a PASI 100 health state. Finally, we model discontinuations related to severe adverse events to distinguish drugs with better safety profiles. CONCLUSIONS: This new framework will help decision makers by better differentiating patient outcomes and determining the optimum order of biologic therapies in the psoriasis treatment pathway.

PRM61

NATIONAL BURDEN OF HOSPITALIZATIONS FOR NECROTIZING ENTEROCOLITIS: RESULTS FROM THE 2009 KID’S INPATIENT DATABASE

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OBJECTIVES: To calculate national estimates of Necrotizing Enterocolitis (NEC)-related hospitalization and associated use of health care resources to explore the effectiveness of potential interventions in NEC associated hospitalization. METHODS: Data from the 2009 Healthcare Cost and Utilization Project Kids’ Inpatient Database was used. Pediatric inpatient care in 4121 hospitals in 44 US States. Inpatient admissions with a International Classification of Diseases, 9th Revision, Clinical Modification diagnosis of Necrotizing Enterocolitis. National estimates of NEC-associated hospitalizations were calculated. Potentially significant covariate associations were studied using hospital costs and Lengths of Stay as dependent variables. Predictors of high hospital cost and prolonged length of stay were evaluated using multivariable logistic regression. RESULTS: 2203 NEC-related hospitalizations occurred among infants in the United States in 2009, resulting in more than $213 million in inpatient hospitalization costs. Mean hospital costs and LOS were $110,951 and 51 days, respectively. Treatment type, died or not during hospitalization, complications, hospital type and hospital region, were significantly associated with higher total costs and longer length of stay. CONCLUSIONS: For an infant disease with a rather low prevalence rate, the estimated annual inpatient pediatri- stic burden of NEC is a sizeable $213.3 million (2009 US$). As surgery treatment significantly influenced cost and length of hospital stay, we recommend for reduction in inpatient burden if medications and outpatient treatments would improve for the treatment of NEC.

PRM62

REDUCTION OF INFLUENZA DISEASE COST WITH SUBOPTIMAL VACCINATION

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OBJECTIVES: The burden of disease due to seasonal influenza in the United States (US) remains high, despite vaccination efforts. In 2003 it was estimated that the direct costs averaged $31.2 billion, with a total societal cost of $87.1 billion. Although the seasonal influenza vaccination is not always a con- summate match, we suggest that the burden of disease is still greatly reduced even when vaccine match to circulating strain is suboptimal. This study aimed to examine the decreased cost burden associated with the seasonal influenza vaccine, even in seasons of suboptimal match, by comparing historic published trends to large claims data. METHODS: Previously published data were compared to sea- sonal influenza records, queried from a claims database containing over 55 million unique patients. Regression modeling was used to compare cost burden of persons