The inclusion of physicians’ attributes is critical for discrete choice experiments. This study identified some statistically significant attributes across the referred process. It confirms previous results by Miele, Weiland and Dungan (2012) showing how patient can benefit from reduction in HbA1C with centralized referral. Further development investigates how significant physicians’ attributes can impact reversed conjoint modeling results on physicians’ cost sensitivity.

PRM62 INTEGRATING A PHARMACOMETRIC MODEL-BASED META-ANALYSIS INTO A HEALTH ECONOMIC MICROSIMULATION MODEL OF COPD

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OBJECTIVES: The study objective was to utilize a pharmacometric model-based meta-analysis (PMBMA) within a health economic microsimulation model (HEM) to predict respiratory pulmonary disease (COPD). PMBMA is a type of meta-regression which employs non-linear models estimated on trial-level data to relate patient and trial characteristics, dosing, surrogate markers, and outcomes effects of treatment. METHODS: A Markov microsimulation model was developed to evaluate the following potential treatment options: (1) fixed ERP rules, (2) dynamic rules, and (3) sharing. Outcomes were compared to ensure there were no systematic differences in the computational implementation in C.

RESULTS: The VBA implementation of the hip-replacement analysis took 2.5 minutes, whereas the spreadsheet implementation took 3.8 minutes. A more substantial improvement (~70X) was gained considerably using the same language, primarily by minimizing the communication between VBA and spreadsheet. A Markov microsimulation model was developed to evaluate the following potential treatment options: (1) fixed ERP rules, (2) dynamic rules, and (3) sharing. Outcomes were compared to ensure there were no systematic differences in the computational implementation in C.

CONCLUSIONS: This study aimed to utilize the visualization of cost-effectiveness modeling methods. The focus of our study was aimed at the applicability of these models, particularly around the major assumptions related to the clinical parameters used in the models, and subsequent clinical outcomes.

PRM65 REVIEW OF MODELS USED IN ECONOMIC ANALYSES OF NEW ORAL TREATMENTS FOR TYPE 2 DIABETES MELLITUS

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OBJECTIVES: This study aimed to provide insight into the utilization of cost-effectiveness modeling methods. The focus of our study was aimed at the applicability of these models, particularly around the major assumptions related to the clinical parameters used in the models, and subsequent clinical outcomes.

METHODS: The VBA implementation of the hip-replacement analysis took 2.5 minutes, whereas the spreadsheet implementation took 3.8 minutes. A more substantial improvement (~70X) was gained considerably using the same language, primarily by minimizing the communication between VBA and spreadsheet. A Markov microsimulation model was developed to evaluate the following potential treatment options: (1) fixed ERP rules, (2) dynamic rules, and (3) sharing. Outcomes were compared to ensure there were no systematic differences in the computational implementation in C.

RESULTS: The VBA implementation of the hip-replacement analysis took 2.5 minutes, whereas the spreadsheet implementation took 3.8 minutes. A more substantial improvement (~70X) was gained considerably using the same language, primarily by minimizing the communication between VBA and spreadsheet. A Markov microsimulation model was developed to evaluate the following potential treatment options: (1) fixed ERP rules, (2) dynamic rules, and (3) sharing. Outcomes were compared to ensure there were no systematic differences in the computational implementation in C.

CONCLUSIONS: This study aimed to utilize the visualization of cost-effectiveness modeling methods. The focus of our study was aimed at the applicability of these models, particularly around the major assumptions related to the clinical parameters used in the models, and subsequent clinical outcomes.

PRM66 ESTIMATING THE TIME TRADE-OFF VALUES OF THE EQ-5D-5L HEALTH STATES IN URBAN CHINA

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OBJECTIVES: The EQ-5D-5L is a new health-state classification system consisting of five dimensions (mobility, self-care, usual activities, pain/discomfort, and anxiety/depression), with each dimension described into five problem levels (no, slight, moderate, severe, extreme). The VBA implementation of the hip-replacement analysis took 2.5 minutes, whereas the spreadsheet implementation took 3.8 minutes. A more substantial improvement (~70X) was gained considerably using the same language, primarily by minimizing the communication between VBA and spreadsheet. A Markov microsimulation model was developed to evaluate the following potential treatment options: (1) fixed ERP rules, (2) dynamic rules, and (3) sharing. Outcomes were compared to ensure there were no systematic differences in the computational implementation in C.

METHODS: A discrete-event simulation (DES) modeling approach was adopted to simulate the EQ-5D-5L health states. The EQ-5D-5L is a new health-state classification system consisting of five dimensions (mobility, self-care, usual activities, pain/discomfort, and anxiety/depression), with each dimension described into five problem levels (no, slight, moderate, severe, extreme). The VBA implementation of the hip-replacement analysis took 2.5 minutes, whereas the spreadsheet implementation took 3.8 minutes. A more substantial improvement (~70X) was gained considerably using the same language, primarily by minimizing the communication between VBA and spreadsheet. A Markov microsimulation model was developed to evaluate the following potential treatment options: (1) fixed ERP rules, (2) dynamic rules, and (3) sharing. Outcomes were compared to ensure there were no systematic differences in the computational implementation in C.

RESULTS: The VBA implementation of the hip-replacement analysis took 2.5 minutes, whereas the spreadsheet implementation took 3.8 minutes. A more substantial improvement (~70X) was gained considerably using the same language, primarily by minimizing the communication between VBA and spreadsheet. A Markov microsimulation model was developed to evaluate the following potential treatment options: (1) fixed ERP rules, (2) dynamic rules, and (3) sharing. Outcomes were compared to ensure there were no systematic differences in the computational implementation in C.

CONCLUSIONS: This study aimed to utilize the visualization of cost-effectiveness modeling methods. The focus of our study was aimed at the applicability of these models, particularly around the major assumptions related to the clinical parameters used in the models, and subsequent clinical outcomes.

PRM67 IDENTIFYING AND CHARACTERIZING TRAJECTORIES OF QOL IN PERSONS WITH ADVANCED CANCER: IMPORTANT CONTRIBUTORS TO DECREASING QOL IN PEOPLE WITH CANCER

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OBJECTIVES: In cancer, we aim at maintaining the Quality of Life (QOL) of patients. Yet minimal work examines predictors of QOL constructs over time. The aim of this study was to explore the temporal sequence leading to optimal QOL over time of key variables indicating the presence or absence of specific problems or patterns of problems in a given EQ-5D-5L health state, including nineteen for all individual health states.

METHODS: Once identified, the articles were reviewed and grouped together according to the type of variables indicating the presence or absence of specific problems or patterns of problems in a given EQ-5D-5L health state, including nineteen for all individual health states.

RESULTS: The VBA implementation of the hip-replacement analysis took 2.5 minutes, whereas the spreadsheet implementation took 3.8 minutes. A more substantial improvement (~70X) was gained considerably using the same language, primarily by minimizing the communication between VBA and spreadsheet. A Markov microsimulation model was developed to evaluate the following potential treatment options: (1) fixed ERP rules, (2) dynamic rules, and (3) sharing. Outcomes were compared to ensure there were no systematic differences in the computational implementation in C.

CONCLUSIONS: This study aimed to utilize the visualization of cost-effectiveness modeling methods. The focus of our study was aimed at the applicability of these models, particularly around the major assumptions related to the clinical parameters used in the models, and subsequent clinical outcomes.
components of the Wilson Cleary Model. METHODS: 212 persons with a variety of advanced cancer from the McGill University Health Center (MUHC) were evaluated using nine patient-reported outcomes and seven direct measures over a course of 18 months. As an attempt to minimize measurement error, Rasch measurement was used to model symptoms, function, general health perceptions (GHP), and overall quality of life (QoL) latent constructs. Additionally, biological variables were measured. The latent QOL construct was then modeled over time using “group-based modeling”. Probability of group membership was finally predicted using the different econometric, symptoms, function, and GHP constructs of the Wilson-Cleary model at study entry, which coincided with the time of cancer diagnosis. RESULTS: The Rasch QOL model over time resulted in 5 distinct trajectories: a linear increasing trajectory representing 26% of the sample, two flat medium and high trajectories representing 26% and 17% respectively, a quadratic increasing trajectory representing 25% of the sample, and a linear decreasing trajectory representing 5% of the sample. The latent constructs from the time of diagnosis that statistically significantly predicted the trajectory were age, sex, cancer type, recate, sex, cancer type, recalled weight loss, CRF, social support, emotional status, and fatigue. CONCLUSIONS: Using Rasch group-based trajectory modeling, and linear regression, we were able to discriminate between relevant QOL subgroups of patients. Most importantly, we were able to determine a factor set that enabled us to make preliminary conclusions about the most important contributors to QOL over time, and emphasize the importance in assessing these constructs in people with cancer.

PRM68 BIAS WHEN ADJUSTING FOR SURROGATES OF CONFOUNDERS
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OBJECTIVES: High-dimensional propensity score (HDPS) methods have been used in health studies for analyzing causal effects in an attempt to control for confounding by a large number of covariates that may be proxies for unobserved factors. We have previously shown that PS models are biased with non-linear link functions. We conducted simulations of two different scenarios of covariates that are children of unmeasured confounders and other unmeasured parents of the outcome variable (colliders) may bias the relationship between exposure and outcome by estimating mean bias, and standard errors. METHODS: We used directed acyclic graphs to replicate the causal network of plausible confounding scenarios. We simulated a scenario where the outcome variable Y is a function of a confounder, C, and another parent, U, but not of exposure X (function of C). Covariate Z is a function of parents C and U. All variables had normally distributed random errors. We conducted Monte Carlo simulations of the causal network, with varying strengths of each of the causal relations, and estimated the effect of X on Y, using linear regression models, while adjusting for covariate Z. RESULTS: Correctly specified regression models are the right model. Bias was large when U was in the model with X only (bias £ 0.5 with variable standard errors). There was some reduction in bias in some situations where Z was highly correlated with the confounder, C, but increased bias when much of the variance in Y was determined by U. CONCLUSIONS: Adjustment for colliders that are children of unmeasured determinants of the outcome variable, but not of the exposure, may also increase bias. This is of great importance in observational studies, particularly when using HDPS to adjust for large numbers of variables that are not direct confounders. Researchers should always use causal knowledge when using data to make causal inference.

PRM69 SIZE DISTORTION OF HYPOTHESIS TESTS FOR TWO-STAGE LEAST SQUARES MODEL: WHAT’S THE RULE OF THUMB CAN’T GIVE YOU?
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OBJECTIVES: Big data approaches may lead to multiple strong instrumental variables (IV), significantly improving the performance of two-stage least squares (TSLS). The current rule of thumb for detecting weak IVs is based on the goal of keeping relative bias of TSLS less than 0.1. With the increasing number of IVs, we need to examine the impact of weak IV on hypothesis testing. We investigated whether or not the rule of thumb can be efficient enough to prevent size distortion of hypothesis testing for TSLS? METHODS: We used a Monte Carlo approach to create 28 original data sets for different models with the number of IVs varying from 3 to 30. For each model, we created 2000 observations and conducted 50,000 iterations to reach a converged outcome. The relationship between the endogenous variable and IVs was carefully adjusted to let the F statistics for the first stage model equal 10 (rule of thumb). The mean value of relative bias and percent of false rejection for each model were recorded and compared across all the models. RESULTS: The relative bias of TSLS equaled 0.1 constantly across all the models in the study. However, the likelihood of rejecting a true hypothesis increased when the number of IVs in the model increased while holding F statistics for the first stage equal to 10. And this likelihood exceeded 10% when TSLS had 24 IVs and exceeded 15% when TSLS had 30 IVs. CONCLUSIONS: When more IVs were added into the TSLS model, the rule of thumb was no longer an efficient guarantee for good performance of hypothesis tests. A more restricted margin for F statistics is needed to be explored to improve the rule of thumb, especially when the number of IVs could be large in the context of big data.

PRM70 DEPRESSION AND COMORBID OBESITY AND HYPERTENSION IN UNITED STATES CHILDREN
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OBJECTIVES: To investigate the association between depression and comorbid obesity and hypertension in US children over a 8-year period using data from the National Health and Nutritional Examination Survey among those with depression and hypertension. METHODS: We built a logistic regression model using a sample of 727 respondents aged 0-18 between 2005 and 2012. RESULTS: Out of 727 subjects, 49.2% were female, 50.1% were male, 11.5% were between the ages of 0-5, 37.8% between the ages of 6-10, 26% between the ages of 11-15, 24.5% between the ages of 16-18, 18.7% were White, 71.3% were non-White,16.4% were obese and 3.6% had hypertension. Obesity and hypertension are significant predictors of depression. Children who are obese are about 2.9 times more likely (p <0.005) to be depressed than children who are not obese, and children who suffer from hypertension are approximately 4.6 times more likely (p<0.001) to experience depression than those who do not have hypertension. Other significant predictors of depression in children are gender (p<0.001), OR=0.486) and family size (p=0.06, OR=0.673). CONCLUSIONS: Obesity and hypertension are associated with depression after controlling for other factors. This finding has important implications for depression management in children. It brings into focus the maintenance of a healthy body mass index (BMI) in mitigating depression.

PRM71 ANXIETY AND COMORBID OBESITY AND HYPERTENSION IN UNITED STATES BACKGROUND & OBJECTIVES: To investigate the association between anxiety and comorbid obesity and hypertension in US children over a 8-year period using data from the National Health and Nutritional Examination Survey among those with anxiety or hypertension. METHODS: We built a logistic regression model using a sample of 717 respondents aged 0-18 between 2005 and 2012. RESULTS: Out of 717 subjects, 49.2% were female, 50.1% were male, 11.5% were between the ages of 0-5, 37.8% between the ages of 6-10, 24.5% between the ages of 11-15, 24.5% between the ages of 16-18, 28.7% were White, 71.3% were non-White,16.4% were obese and 3.6% had hypertension. Obesity is a significant predictor of anxiety. Obese children are about 2.1 times more likely (p=0.002) to be anxious than non-obese children. Children who are not obese. A significant association was also found between anxiety and gender (p=0.05, OR=0.341) and family income (p=0.06, OR=1.012). CONCLUSIONS: Obesity predicts the prevalence of anxiety in children. The implication is that maintaining a healthy body mass index (BMI) in children could significantly reduce the prevalence of anxiety in children.

PRM72 THE IMPACT OF TWO DIFFERENT CASE DEFINITIONS OF MAJOR CONGENITAL MALFORMATIONS IDENTIFIED FROM QUEBEC (CANADA) ADMINISTRATIVE DATABASES ON THEIR ASSOCIATION WITH ASTHMA CONTROLLER MEDICATIONS TAKEN DURING PREGNANCY
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OBJECTIVES: Accurate identification of major malformations cases from administrative databases is crucial for perinatal epidemiology. In Quebec, most of major malformations are detected in hospital, however administrative databases capture diagnoses data from both hospitals and other medical facilities. We aimed to compare the prevalence of major congenital malformations, but less impact on the associations between maternal use of asthma controller medications and the prevalence of major malformations at birth and during the first year of life. METHODS: A cohort of pregnancies from asthma medications between 1990 and 2012 was constructed through the linkage of administrative databases from Quebec: We calculated the prevalence of major malformations identified in the 1st year of life using the 2 case definitions. We also calculated the crude odds ratio (OR) of major malformations associated with maternal use of inhaled corticosteroids (ICS) and long-acting beta-agonists (LABA) in the 1st trimester of pregnancy. RESULTS: From 30655 pregnancies, 2060 (6.8%) major malformations were identified with hospital diagnostic codes only vs. 7248 (9.0%) with hospital and other medical facilities diagnostic codes. The OR of major malformations associated with ICS was 1.1 (95%CI: 1.0-1.2) with the first and 1.1 (95%CI: 1.0-1.2) with the second case definition. Corresponding results were 1.3 (95%CI: 1.0-1.6) and 1.1 (95%CI: 0.9-1.4) for LABA exposure. CONCLUSIONS: The case definition of congenital malformations had a considerable impact on the prevalence of major congenital malformations, but less impact on the associations we examined. The percentage of false positive cases when using all medical facilities diagnostic codes in the case definition is unknown and should be the objective for future research.

PRM73 SURVIVAL MODELING FOR THE ESTIMATION OF TRANSITION PROBABILITIES IN MODEL-BASED ECONOMIC EVALUATIONS IN THE ABSENCE OF INDIVIDUAL PATIENT DATA: A TUTORIAL
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OBJECTIVES: Survival modeling techniques are increasingly being used as part of decision-making for health economic evaluations between 1990 and 2012. It is imperative for researchers to know about the steps in selecting and using the most suitable ones. This paper is aimed at proposing a tutorial for the application of appropriate survival modeling techniques to estimate transition probabilities, for use in model-based economic evaluations in the absence of individual patient data. The use of the proposed tutorial is illustrated based on the final progression-free survival (PFS) analysis of BOLERO-2 trial in metastatic breast cancer (mBC). METHODS: An algorithm was adopted from Geyut and colleagues, and was then run in the statistical package R to reconstruct individual patient data (IPD), based on the final

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