treatment patterns, and marginal structural models (MSMs). MSMs utilize all of the data, account for the treatment switching, while adjusting for selection bias and patient dropout.

RESULTS: Over 25% of 664 randomized patients switched treatments during the study, 7% augmented their randomized treatment, and another 28% discontinued early. Switching was greatest among patients randomized to conventional antipsychotics (45% switched to atypicals, <20% of atypical patients switched therapies). Treatments did not differ in BPRS total score using various intent-to-treat analyses including last-observation-carried-forward. However, MSMs and other approaches that took into account the treatment switching demonstrated statistically significantly greater symptom reduction for patients treated with olanzapine as compared to conventional antipsychotics (overall treatment difference: 4.2 points, p = 0.007).

CONCLUSIONS: Drawing inferences on treatment effects in longitudinal naturalistic studies is challenging due in part to patients changing or stopping medications over time. In this study, standard methods did not address treatment effectiveness, while MSMs provided a framework for addressing effectiveness in the presence of switching, selection biases, and early dropout. The MSM analysis showed olanzapine to be superior to conventional antipsychotics in reducing schizophrenic symptom severity.

PE3 COMORBIDITY INFLUENCE INDEX
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OBJECTIVE: To define a method of recognizing influence of comorbid conditions when studying outcomes of a specific disease or therapy. Background: Patients are often suffering from multiple disease states. When looking at resource utilization, absenteeism, and other outcomes for a specific disease state or therapy it is important to recognize the influence of other diseases to the total costs and outcomes of the disease of interest.

METHODS: Several comorbidity indexes have been developed. Well known and described are the Charlson Index with adaptations, Index of Coexistent Disease, Cumulative Illness Rating Scale, Chronic Disease Score and several other disease specific indexes. The typical use of these indexes is predictive, a forecast of mortality or costs based on the current history of a patient. Many of these indexes require clinical information. The focus of the current index is strictly toward administrative (claims) databases. RESULTS: The methodology presented here is a nonlinear transformation of the number of comorbid conditions, scaled so that the probability of significant comorbidity increases monotonically with the number of conditions reported. This AHRQ Comorbidity Index algorithms described by Elixhauser are used to define a set of 31 comorbid conditions as defined by 1111 ICD9 diagnoses. Sensitivity analysis of the number of expected conditions resulted in a denominator of ten units.

CONCLUSIONS: The denominator to yield a percentage of costs, outcomes, etc attributable to the comorbid conditions divides the number of Elixhauser conditions, other than the disease of interest. This index takes advantage of the longitudinal nature of claims data to be inclusive of all disease states within a patient and not just the current cause for treatment. It provides an alternative approach to assign costs, absenteeism, and other outcomes to a disease state that is a more accurate valuation of the outcomes without undue influence from other comorbidities.

PE4 AN AUTOMATED METHOD TO INFERENCE MORBIDITY DESCRIPTIONS FROM PATIENT PHARMACY PROFILES
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OBJECTIVES: Inferring disease descriptions (e.g. asthma, multiple-sclerosis, etc) in a patient from his/her pharmacy profile is important in several sectors of health care such as insurance and medical management. While the inference is relatively straight forward in a few cases (e.g. diabetes in the presence of insulin), very often the relationships are multifactorial. Manual, expert-based processes for the task are unscalable and unmaintainable.

An automated, scalable and accurate method to infer disease descriptions from a patient’s pharmacy profile is the objective of this study. METHODS: A large managed care database comprised of both medical and pharmacy claims was used for the implementation. The pharmacy profiles were abstracted into dummy variables based on First Data Bank drug classification. One dummy variable for each disease description based on medical claims was created, and there were as many dummy variables as disease descriptions. For the current implementation, Clinical Care Groups (a product of Ingenix) was chosen as the disease description standard. To capture the multifactorial nature of the relationships, logistic regression was used. The process of creation of several such models was automated. The models were evaluated based on standard metrics such as concordance rate, false positives, sensitivity, etc. Performance of the models rela-
tive to coding practices was also investigated. RESULTS: Over 100 models were implemented. Majority of the models were considered acceptable. Unacceptable models were produced for conditions of low prevalence and ill-defined conditions. Model performance was also affected by coding practice (e.g. under-coding for asthma, depression). CONCLUSIONS: A scalable and automated method for inferring disease descriptions based on pharmacy claims in a patient was successfully created. Application-specific modifications to the method need some investigation and are being pursued.

OUTCOMES AND PREFERENCES

OP1
IS THE CURRENT METHOD OF VALUING HEALTH OUTCOMES IN COST-EFFECTIVENESS ANALYSIS VALID?
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OBJECTIVES: An implicit assumption in cost-effectiveness analysis is that the value of the health benefit (e.g., life year or quality-adjusted life year gained) is directly proportional to the gain, irrespective of baseline life expectancy. For example, a gain of 6 months is valued the same, irrespective of whether the baseline life expectancy is 40 years (e.g., for a healthy, middle-aged adult) or 6 months (e.g., for a patient with metastatic cancer).

We examined the theoretical and empirical evidence regarding the validity of this assumption. METHODS: We reviewed the theoretical and empirical literature on the relationship between the value of mortality reduction and life expectancy. We focused on outcome valuation using the willingness-to-pay (WTP) and quality-adjusted life year (QALY) approaches.

RESULTS: Results of the review suggest that while research has been conducted on the relationship between health gains and baseline life expectancy due to age, the relationship between health gains and baseline life expectancy due to health status remains largely unexplored. Economic theory suggests that WTP for risk reductions depends on baseline risk; however, the two theoretical arguments (i.e., “dead anyway” and proportionality) as to why this is so lead to opposite conclusions. QALYs are assumed to be independent of baseline life expectancy, but this assumption has been challenged by theorists who have proposed the use of “age-weighted” measures. Empirical studies have yielded mixed results. Stated and revealed values of life expectancy gains are often associated with baseline life expectancy, but the direction of the association is inconsistent.

CONCLUSIONS: The literature gives mixed support for the assumption implicit in cost-effectiveness analysis that the value of a survival gain is directly proportional to the gain and independent of baseline life expectancy. Comparisons of cost per QALY across populations with varying life expectancies should recognize this limitation.

OP2
COMPARISON OF DISCRETE CHOICE EXPERIMENT (DCE) WITH VISUAL ANALOG SCALING (VAS) METHODS FOR ESTIMATING PREFERENCES FOR PHYSICAL DISABILITY STATES

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OBJECTIVES: Discrete choice experiments (DCEs) are choice-based methods used to estimate utilities. While DCEs are being used increasingly in health economics, their application to estimating utilities for health states and outcomes is more novel. Visual analog scaling (VAS) is a well-established rating method used widely in health care. Previous studies have shown that DCE and VAS results are highly correlated. This study compares state and attribute utilities for Barthel Index (BI) physical disability states estimated by DCEs and the VAS method.

METHODS: A convenience sample of 152 subjects (≥45 years) able to answer the 37-question survey was enrolled. Demographic characteristics, and physical disability and caregiving histories were collected. The DCE consisted of 13 choice sets. The VAS exercise used a rating thermometer (0 = worst imaginable health state, 10 = best imaginable health state) to rate 4 scenarios. The survey was administered in individual and small group settings by trained researchers. Utilities for disability states and attributes were analyzed using ordinary least squares and probit regressions. Spearman correlations were calculated to compare utilities and BI scores.

RESULTS: Thirty-one percent of the subjects were male, mean age was 61 years, 88% were Caucasian, 60% had more than a high school education, and 63% were married. The strongest determinants of VAS utilities were Feeding (ρ = .002), Continence (ρ = .003), Mobility (ρ < .001), and Bathing Use (ρ = .041). Feeding, Bathing Use and Personal Care were the strongest determinants of DCE utilities (ρ < .001). The relative contribution of Feeding was strongest in the DCE model. Correlations between VAS and DCE utilities, and BI scores were 96% and 91%, respectively. The correlation between VAS and DCE utilities was 94%.

CONCLUSIONS: Although highly correlated, attribute contributions to DCE and VAS utilities differed. Subgroup analyses and exploration of design issues should help clarify the basis for the model differences.

OP3
UNDERSTANDING THE CHARACTERISTICS OF NON TRADERS IN TTO UTILITY ELICITATION

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OBJECTIVES: To investigate characteristics associated with being a non-trader and differences between trader and non-trader groups. A limitation of utility elicitation using the Time Trade-Off (TTO) method is that a substantial minority are inherently non-traders, i.e. philosophically opposed to giving up any amount of life in exchange for improved health. However, little is known regarding characteristics associated with non-traders or differences between traders and non-traders.

METHODS: A cross-sectional supervised self-administered survey was used to assess the perception of health-related quality of life (HRQOL) and utilities using the Time Trade-Off (TTO) method in the general population of 3 groups: Caucasian Americans (n = 441), African Americans (n = 344), and Other Americans (n = 41). Each person was given one of three hypothetical health states. Logistic regression models were constructed and analyzed to investigate the characteristics associated with being a non-trader. Independent variables were age, gender, race/ethnicity, and importance of religion. We adjusted for current health. RESULTS: Of the 823 participants, 17% were non-traders and 57% were female. Four percent had not completed high school, 69% had a high school degree and 27% had a college degree. In terms of importance of religion, 3% reported that religion was not at all important, 6% said religion was a little important, 23% said somewhat important, and 68% said very important. Mean age of the population...