IS MARKOV CHAIN/DECISION TREE APPROACH BETTER THAN COST FUNCTION APPROACH IN MODELING THE PHARMACEUTICAL COSTS FOR ATTENTION DEFICIT/HYPERACTIVITY DISORDER? AN EMPIRICAL STUDY BASED ON A LARGE CLAIM DATABASE
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OBJECTIVES: To examine whether the Markov chain/decision tree approach is better than the cost function approach in modeling the pharmaceutical costs for Attention Deficit/Hyperactivity Disorder (ADHD).

METHODS: Using one half sample of a nationally representative large claim data set (Pharmetrics claim database), we applied both the Markov Chain/decision tree approach and cost function approach to model the pharmaceutical costs for attention deficit/hyperactivity disorder. Then, we examined both the validity and reliability of these two models. In terms of validity, we examined whether and how the model assumptions are satisfied under each approach. In terms of reliability, we used another half sample of the claim data set to test the two models. RESULTS: More assumptions were violated in the Markov chain/decision tree model than in cost function. One example of these violated assumptions is that Markov chain/decision tree approach assumes the independence of transition probabilities. Furthermore, because that claim data do not provide many parameters required in the Markov chain/decision tree model, the Markov chain/decision tree approach has used many arbitrary estimates, which made model very unreliable. The examples of these parameters are the rate of adequate response of each medication, the rate of titration up or down, the rate of switching between medications, the tolerable rate of each medication, and drop out rate. CONCLUSIONS: The Markov chain/decision tree approach is not necessary better than cost function approach in modeling pharmaceutical costs. When modelers do not have solid estimates of those transition probabilities and when the assumptions underlying this approach are violated, cost function approach may be better than the Markov chain/decision tree approach. The limitation of cost function approach is that it does not give clinical process information as rich as the Markov chain/decision tree approach.

PROBABILISTIC SENSITIVITY ANALYSES: COMMONLY RECOMMENDED, UNCOMMONLY PERFORMED
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OBJECTIVE: Guidelines for the economic evaluation of pharmaceuticals in Canada (CCOHTA, 1997) and the US (Gold et al., 1996) encourage the use of probabilistic sensitivity analyses (SA). Increasingly, the literature also reports and supports the use of probabilistic SA over the traditional univariate and multivariate SA. Poster presentations from the ISPOR May 2002 conference were reviewed to identify if users were producing the encouraged probabilistic SA. It was recognized that abstracts do not permit comprehensive methodology description, but given the fundamental importance of SA, it was expected that minimum information expectations should be met.

METHODS: Abstracts of the ISPOR May 2002 poster presentations were published in Value in Health May/June 2002. All abstracts classified under “Economic Outcomes” were reviewed to identify original economic evaluations. Each identified evaluation was examined for its reporting and use of SA; these were classified by SA methodology (unknown, univariate, multivariate, probabilistic).

RESULTS: Of 154 abstracts with economic outcomes, 50 were original economic evaluations. Of these, 16 (32%) did not mention SA at all. The remaining 34 abstracts (68%) mentioned the use of SA. Of these, 15 (44%) explicitly stated the SA methodology; methodology was implicit by results reporting for a further 10 abstracts (29%); methodology was indeterminable for the final 9 abstracts (26%). Of the 25 abstracts for which SA methodology was determinable, 16 (64%) used only univariate analysis, 8 (28%) used multivariate analysis, and 2 (8%) used probabilistic analysis.

CONCLUSIONS: Despite the encouragement of the literature and guidelines, probabilistic SA remain uncommon in economic evaluations. Moreover, the adequate reporting of SA was uncommon in the May 2002 ISPOR poster abstracts.

INCREASING PUBMED YIELD FOR PHARMAECONOMIC RESEARCH USING ITERATIVE SEARCH STRATEGIES
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OBJECTIVES: With increasing emphasis on using published evidence to quantify the value of drug treatment, we assessed the value of adding search terms identified from key articles to initial search strategies to locate studies in large subject areas. METHODS: Systematic review in five chronic disease settings (asthma, depression, diabetes, GI disorders, and migraine), including development of pre-defined criteria for study inclusion. Outcomes of interest were those relevant to the value of pharmaceutical treatment (economic, societal, and/or patient benefit). We constructed a MEDLINE search (via PubMed) with terms indicating drug treatment (“drug therapy” subheading) and outcomes (“Economics, pharmaceutical,” “Costs and Cost Analysis,” and “Quality of life” MeSH terms). We then reviewed indexing terms present in key articles found independently of the initial search, using an iterative process. Terms which led to identification of new, relevant citations without excessive