PMD23

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

Sun P, Swindle R
Eli Lilly and Company, Indianapolis, IN, USA

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.

PMD24

PROBABILISTIC SENSITIVITY ANALYSES: COMMONLY RECOMMENDED, UNCOMMONLY PERFORMED

Rocchi A, Chin W
Axia Research, Hamilton, ON, Canada

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.

PMD25

INCREASING PUBMED YIELD FOR PHARMACOECONOMIC RESEARCH USING ITERATIVE SEARCH STRATEGIES

Frame D[1], Klawansky S[2]
[1]MetaWorks Inc, Medford, MA, USA; [2]Harvard School of Public Health, Boston, MA, USA

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

increase in the total search yield were retained. Supplemental electronic (Current Contents, Cochrane, University of York NHS Centre) and manual searches were used to create a listing of accepted studies for comparison to the PubMed-only search results. **RESULTS:** Three thousand six hundred seventy-seven citations were downloaded and screened from all sources, resulting in 135 accepted papers across the five settings (asthma-20, depression-40, diabetes-16, GI disorders-41, migraine-18). Using initial search terms, we would have captured only two-thirds of the eligible studies in our PubMed search (range 55%–83% by setting). By undergoing the explorative process to identify additional terms, 90% of studies (122/135, range 80–100% by setting) were identified via PubMed. **CONCLUSIONS:** Careful iterative development of search terms should be a component of all systematic searches in PubMed. Supplemental electronic and manual searching remains necessary to obtain a comprehensive study set. PubMed indexing varies by clinical setting and journal subject, with somewhat weaker results for pharmacoeconomic/managed care journals (78%) than disease-specific (94%) or general medical (98%) journals.

PMD26

ECONOMIC AND OUTCOMES RESEARCH IN THE REAL WORLD: EVALUATION OF ITS RELEVANCE

Crawford B[1], Baron-Papillon F[2], Evans C[1], Horowitz-Mehler N[1]
[1]Mapi Values, Boston, MA, USA; [2]Mapi Values, Lyon, France

OBJECTIVE: To review the current state of economic and outcomes research focusing on its application, relevance and communication forums. **METHODS:** A review of the literature, web sites and guidelines was performed to identify examples where economic and outcomes research was used. A literature search for the top 10 selling drugs in 2000 was also performed to evaluate the extent of outcomes research in these products' communications strategy. **RESULTS:** As of 2002, 9 countries required pharmacoeconomic data in reimbursement decisions, 14 countries had informal guidelines and 6 were under development. Of the top 10 drugs by revenues, several trends were noted: a decrease in outcomes communication near patent expiration (e.g., omeprazole), a focus on economic studies rather than PRO when cost offset was a potential advantage (e.g., celecoxib), an emphasis on communicating quality of life information even when drug acquisition costs are high (e.g., epoetin alpha), and a shift from economic communication, following successful formulary pull-through, to patient satisfaction and quality of life. Internationally, the relevance of PRO data may be increasing. New strategies for the use of economic and outcomes data have also been found: in a class of drugs for intermittent claudication facing a revision of its reimbursement dossier in France, a positive PRO study resulted in the change in the package insert for one product, and that product was the only one its class to regain market share; examples of the use of economic data to avoid de-reimbursement also occurred in France. Quality issues continue to be a problem in reimbursement submissions in several countries (notably Australia). **CONCLUSION:** Economic and outcomes information is being used in an attempt to improve market share by answering regulatory requests and in limited instances may play a crucial role in preserving or increasing revenues.

PMD27

DO PHARMACOECONOMIC FELLOWSHIP PROGRAMS PROVIDE THE SKILLS NECESSARY FOR TODAY'S WORK ENVIRONMENT?

Maio V, Lofland JH
Thomas Jefferson University, Philadelphia, PA, USA

OBJECTIVES: There is limited information on whether pharmacoeconomic/outcomes research (PE/OR) fellowship programs provide their trainees with an appropriate set of skills. The objectives are to: 1) identify which PE/OR skills are most commonly used by former fellowship trainees in their current work setting, and 2) determine whether former fellowship program participants find their training applicable to their present occupation. **METHODS:** A 41-item questionnaire was administered to former fellows of PE/OR fellowship programs via the ISPOR website. Former fellows were identified through the directories of the American College of Clinical Pharmacy and ISPOR as well as the website and membership roll of ISPOR. Individuals were enrolled if they 1) completed a PE/OR program at least 3 months prior to initiation of the survey, and 2) were currently employed. **RESULTS:** Of the 61 respondents meeting the inclusion criteria, 56% completed a PE/OR fellowship program after 1999; 55% and 20% work in the pharmaceutical industry and academia, respectively. Respondents spent 27% and 32% of their time performing PE and OR, respectively. Respondents were actively involved in the conceptualization (74%), operationalization (54%), and data management (67%) of research projects. Overall, 90% of the respondents were satisfied with their PE/OR fellowship experience, and 92% stated that the program provided the necessary skills for their work setting. PE, decision analysis and modeling, and OR were cited as the most essential topics needed for their current occupation. **CONCLUSIONS:** According to former fellows, it appears that the current skill sets provided in PE/OR fellowship programs prepare individuals for today's work environment within the field of PE/OR. These findings help demonstrate that PE/OR fellowships are valuable training programs.