Respondent prefer to give to the young and to those who are worse off, either now (quality of life), or in the future (prognosis). Elderly individuals, more often, prefer not to prioritize. It is estimated that an additional life year in a 20 year old is worth 12.8 times the value of an additional year in an 80 year old. An additional life year given to someone with a life expectancy of 5 years is worth 2.12 times that of one given to someone with a life expectancy of 10 years. An additional life year in someone with a utility that is 0.25 lower than someone else is worth 2.45 times more. CONCLUSIONS: All results indicate that people do not think that a QALY is a useful value of life expectancy in the age of the respondent, the prognoses of the patients and the patients’ current quality of life.

SOCIAL PREFERENCES FOR EQ-SD HEALTH STATES: IS IT TIME TO CALL “TIMEOUT” ON TTO? Mary F, Kind F
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The valuation of health benefit is arguably the most fundamental issue underpinning all clinical and economic evaluation. However, there is disagreement about the choice of method by which such valuation is established. Advice issued by HTA agencies generally favours utility elicitation methods but there is growing support for simpler methods that evoke ordinal judgments. Decision-makers face difficult choices when reviewing evidence based on different valuation methods. OBJECTIVES: to examine the extent to which ordinal preferences captured through VAS ratings are preserved by TTO utility elicitation methods. METHODS: The UK MVH study (n = 3,395) provides the empirical basis for the EQ-SD values required in economic evaluations submitted to NICE. This study collected both VAS ratings and TTO utilities for 13 EQ-SD health states per respondent. These data have been re-analysed for the purposes of this paper. RESULTS: Spearman’s Rank Correlation Coefficient (rho) for TTO and VAS values was computed on a within-subject basis for all respondents, yielding a rho of 0.85 of respondents had a rho of less than 0.85 (equivalent to a mean absolute difference of 1.7 in ranking over all 13 states). Over 85% of respondent’s TTO values differed in rank by more than 3/13 places when compared with VAS ratings. Respondent characteristics did not account for differences in rankings of TTO and VAS scores. CONCLUSIONS: This study shows that for almost half the MVH respondents, TTO utilities did not coincide with ordinal preferences as revealed by their VAS scores. These results challenge a number of basic assumptions – about the transformation of ordinal values into cardinal utilities; the superiority of TTO over VAS methods and the extent to which TTO “accurately” represents individual preferences at all. Ultimately they undermine the status of the TTO as a legitimate measure of preferences in social decision-making.

Abstracts

UT4

HARMOCOENOMIC APPLICATIONS IN FORMULARY MANAGEMENT: A CASE STUDY OF ERLOTINIB AT A MAJOR CANCER CENTER Lal L1, Uguw C2, DaCosta Byfield S, Miller LA, Arbucka R1
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ORGANIZATION: University of Texas-MD Anderson Cancer Center (M. D. Anderson), PROBLEM OR ISSUE ADDRESSED: Budgets for cancer treatments are rising steadily with the advent of newer targeted therapies, in an era of health care cost containment. The issues of budgetary constraints and formulary management create pressure on maintaining an economically viable formulary. The purpose of this project was to study the budget impact of erlotinib in stage III/IV NSCLC at a tertiary cancer center. The objective of the Drug Use Policy and Pharmacoeconomics Department is to utilize current clinical indications, resource utilization, and cost information to perform a budget impact analysis, as part of the economic analysis of all new drugs considered for inclusion into the institutional formulary. An economic assessment (pre-analysis) was conducted at the time of formulary evaluation and addition in May 2005, and a reassessment and budget impact re-evaluation (post-analysis) was executed 12 months after formulary approval, from June 2006 to May 2007. OUTCOMES ITEMS USED IN THE DECISION: The following data were collected: the number of patients; the dose amount; the number of doses; the number of cycles; the purchase cost, the charge amount, and the reimbursement amount. The budget impact analysis was executed using direct pharmaceutical costs adjusted to January 2008 US dollars with the aid of the Producer Price Index (PPI) from the U.S. Bureau of Labor Statistics. IMPLEMENTATION STRATEGY: The pre-analysis model was based on the FDA approval of erlotinib as a second line therapy in stage III/IV NSCLC. Parameters, such as median duration of treatment and patient survival, were gathered from multiple clinical trials and published literature. The number of patients was estimated from expert opinion of clinicians. The pre-analysis model estimated that it would cost the institution $1,484,220 to treat 347 stage III/IV NSCLC patients for 67 days with erlotinib. This data along with a monograph was presented to the Pharmacy and Therapeutics (P&T) committee of physicians that are NCPA Diabetes Physician Recognition Program (DPRP) recognized, who provided feedback tools with support to the delivery and recognition of consistent high quality care. OUTCOMES ITEMS USED IN THE DECISION: Clinical efficacy/effectiveness IMPLEMENTATION STRATEGY: The Arta National Quality Management Diabetes Strategy Work Group met and agreed on the implementation of a three phase program to increase the number of NCQA DPRP recognized practitioners. Arta conducted an analysis of two service areas (South Florida and Southeast) to rank the high volume Arta contracted practitioners with the most Arta members over the age of 18 with a diagnosis of diabetes. The member must have been under the care of the practitioner in calendar year 2007. For the practitioner to qualify he must have at least 25 Arta members meeting this criteria. Forty practitioners were recruited into the program (20 from each service area). Arta utilized Total Therapeutic Management (TTM), a research organization, to implement the three phase program. In phase 1, TTM recruited the qualifying practitioners and conducted an in-office chart review to abstract data consistent with the Comprehensive Diabetes Care Healthcare Effective- ness Data and Information Set (HEDIS®) measures. TTM utilized its Diabetes Performance and Enhancement Program (DPERP) electronic application to provide the practitioners with tools to help them see if they met the phase 1 criteria. In phase 2, TTM conducted face-to-face outreach to discuss recognizing standing, patient con- sults (ClinAdvisor), and pharmacy compliance reports. The ClinAdvisor patient con- sults detailed clinical outcomes such as, A1C, BP, LDL goal, etc. Also during the visit Arta developed tools were provided such as a patient’s stickers, eye exam report forms, and 3-year diabetes health checklist to promote quality improvement in tracking and manag- ing members with diabetes. TTM communicated with the practitioner during the six- month waiting period in areas that needed improvement. In phase 3, TTM conducted chart reviews based on the criteria set forth by NCQA. TTM input the abstracted data into its electronic application to evaluate recognition status. RESULTS: In order to achieve diabetes recognition, practitioners must have a cumulative score of 75 points or more from ten measures related to diabetes care. Of the 40 practitioners that participated in the program four had the potential points necessary to meet the cumulative score at the initial evaluation. After the second review conducted approximately six months after the first review, 18 practitioners agreed to participate in phase 3. Of the 18 practitioners participating, 17 practitioners met the criteria for DPRP recognition. LESSONS LEARNED: Practitioners are aware of the benefits of Pay for Performance initiatives. They are also aware of the various recognition programs available through NCQA. Practitioners have expressed concern about the time or office staff necessary to conduct their own chart reviews and submit the application to become a recognized provider. If there is a process in place to conduct chart reviews and provide chart review-based recommendations and TTM practitioner tools, there is a strong possibility that more practitioners can meet the requirements set forth by NCQA to become a DPRP recognized provider for diabetes and other conditions.
the best use of expensive resources. Continued improvements to this process are ongoing, by incorporating off-label estimates into the original model.

CASE6

PILOT PROJECT: INTEGRATING ADMINISTRATIVE AND FINANCIAL DATABASES TO ESTIMATE PRICE OF HOSPITALIZATIONS

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ORGANIZATION: Agency for Healthcare Research and Quality (funding organization)

PROBLEM AND ISSUE ADDRESSED: Hospital administrative and financial data have been used in “cost-effectiveness”, “cost-benefit”, and “burden-of-illness” studies because they contain large numbers of cases for specific conditions and procedures and because charge information is available. While these data generally contain information on how much the health system charged for the hospital stay, they do not provide information on the cost to provide care and the amount reimbursed for care. In the past, AHRQ developed a set of hospital-level cost-to-charge ratios to estimate the cost of providing care. Currently, AHRQ is piloting a project to create price-to-charge ratios that will be used in conjunction with charge information collected on hospital discharge records to estimate the “price” of inpatient hospital care. In developing price-to-charge ratios, the term “price” reflects the amount that hospitals are paid by insurers and consumers based on payer revenue information for each hospital. This is the amount of revenue that hospitals actually receive, net of any discounts negotiated with insurers. These ratios will be linked to the Healthcare Cost and Utilization Project (HCUP) State Inpatient Databases (SID). The HCUP SID files contain the universe of inpatient discharge charges (including information on charges) in participating States, translated into a uniform format to facilitate multi-State comparisons and analysis. Separate 15492 ratios are computed in HCUP encompassing about 90 percent of all U.S. community hospital discharges. The impetus for this pilot is the President’s and Secretary Leavitt’s initiatives to make health care information more transparent to consumers. While the addition of price information will help consumers make more informed choices about hospitalizations for themselves and their families, this information will also be valuable for researchers by providing alternatives to measuring resource use that are better suited for their studies. GOALS: The short-term goals of this project include: • Explore the feasibility of creating prices for common hospital discharge diagnosis-related groups (DRGs) at a state-wide level using data from four broad payer groups (Medicaid, Private, and self-pay and groupings of conditions. • Increase understanding of pricing differences among payers. • Release the data publicly after some internal validation. The long-term goals of this project include: • Develop price-to-charge ratios for hospital discharge DRGs at a state-wide level using data from four broad payer groups (Medicaid, Private, and self-pay) and groupings of conditions. • Validate estimated prices with data sources such as CMS, MarketScan. • Provide states with information on hospital average prices that can be used to populate a Website where consumers can compare prices for common diagnoses. • Release prices publicly on additional AHRQ databases, including national databases such as the Nationwide Inpatient Sample (NIS) and Kids’ Inpatient Database (KID). OUTCOMES ITEMS USED IN THE DECISION: HCUP data have been used in “cost-effectiveness”, “cost-benefit”, and “burden-of-illness” studies because they contain large numbers of cases for specific conditions and procedures and because charge and estimated cost information is available. The addition of estimates of prices will provide researchers an additional tool to more effectively conduct their studies. IMPLEMENTATION: STRATEGY: AHRQ solicited participation of HCUP Partner organizations that have access to hospital revenue information by payer, and are willing to release state-level charge and price information broken out by the four broad payer groups and broad diagnostic categories. Initially, AHRQ is utilizing information from the HCUP SID Partner States in conjunction with hospital-specific revenue information to develop prices for hospitalizations. RESULTS: This project is on-going and making substantial progress. Five states with the required financial information have been identified. The analytic methods to validate the data have been determined. The plan to create the price-to-charge ratios for these states is in place. An illustrative example of a specific condition or procedure will be provided during the presentation to demonstrate the differences in resource use as measured by “charges,” “costs,” and “prices.” An explanation of what these concepts are capturing will also be presented.

LESSONS LEARNED: To date, the project the lessons learned include: 1. The number of States that collect financial information by major payers for each hospital is limited. 5 States have been identified that have the detailed information required. As the study moves forward, our objective is to identify 8–10 States with this level of information. 2. While States may collect gross and net revenue information by payer, not all State data are collected on a standardized methodology. Methods will be developed to address this issue. 3. Definitions of revenues and the level of detailed data collection vary considerably among States. These differences will be reconciled.

PODIUM SESSION II: RESEARCH ON METHODS – COST & CLINICAL OUTCOMES METHODS

EVIDENCE-BASED TIME HORIZON FOR THE INTERVENTIONS IN PHARMACOECONOMIC MODELS

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When the measurement of a long-term outcome is necessary, selecting evidence-based time horizons according to pharmacoeconomics data is crucial. OBJECTIVE: To illustrate the effect of assumed time horizon for the interventions in pharmacoeconomic models on measured outcomes. METHODS: The benefit of reducing LDL-C was incorporated into a model to calculate reduction in cardiovascular events and resulted economic outcomes. Data for LDL-C reduction from a head-to-head RCT (Am Heart J 2002;144:1044-51); rosuvastatin (starting 5 mg) versus atorvastatin (starting 10 mg) with up-titration doses were incorporated into the model; and distribution of cardiovascular risk for users (N = 140,000, duration five years) in Canadian population (Clin Invest Med 2007;30:E63-E69) were assumed. To find out the effect of time horizon on economic evaluation of therapeutics, the component of five years was changed to ten years time horizon. RESULTS: Using five years duration of therapy, rosuvastatin and atorvastatin can prevent 9105 and 8702 cardiovascular events (non-fatal MI and stroke), respectively. Reduction in non-fatal MI and stroke can be valued to $252,300,392 (CDN) and $230,980,624 direct cost savings, respectively ($288,871,921 and $185,510,416 total net benefit). With ten years assumption for statin therapy, rosuvastatin and atorvastatin can prevent 25948 and 22190 cardiovascular events, respectively. The prevention of cardiovascular events according to the model based on ten years time horizon were calculated 2.73 and 2.55 times higher than the five years based model for rosuvastatin and atorvastatin, respectively.

CONCLUSION: This simulation study illustrates the effect of incorporated time horizon in pharmacoeconomic models on the resulted outcomes. Therefore, considering an evidence-based time horizon for the model is essential. For example, study this Canadian community-based clinical practice data published a median of approximately five years of statin therapy for the patients. Therefore, a time horizon of five years was assumed to be an evidence-based time horizon for the model.

METHODS FOR INTERPRETING AND DISPLAYING RESULTS FROM REGRESSION MODELS: BEYOND BETAS AND ODDS RATIOS

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OBJECTIVE: To present practical methods for interpreting and visualizing results from regression models that mitigate the risk of miscommunication and misinterpretation.

METHODS: A series of examples of correct and incorrect ways of presenting results from regression models will be presented from the recently published pharmacoeconomics and outcomes research literature. Methods for computing expected values and predicted probabilities from ordinary least squares (OLS) and logistic regression models will be presented. RESULTS: Computing and presenting expected values and predicted probabilities can, and have in some of the published literature, resulted in less ambiguous and easier to interpret results. CONCLUSION: As pharmacoeconomists, we are called on to present our results not only to our healthcare providers, but also to policy-makers and the lay media. Therefore, it is important to make sure results from complicated regression analyses are properly communicated and interpreted. However, coefficients from all but the simplest models are often incorrectly interpreted. Odd ratios from logistic regression models are even more likely to be misinterpreted (as risk ratios). Furthermore, simply reporting odds ratios does not convey information about the probability of outcomes occurring for reference group(s). It will be argued that computing and presenting the expected value, E(Y), from an OLS model and the predicted probability, Pr(Y), from a logistic regression can help researchers better “tell a story” and result in less ambiguous presentations of findings. For example, the adjusted expected costs of an intervention can be computed for different doses and for different demographic groups and the predicted probability of medication adherence can also be computed as a function of different combinations of patient demographic characteristics and attitudes.

ESTIMATING DRUG COSTS IN ECONOMIC EVALUATIONS IN IRELAND AND THE UK: AN ANALYSIS OF PRACTICE AND RESEARCH RECOMMENDATIONS

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OBJECTIVES: The cost of the drug of interest, its comparator(s) and concomitant drugs, are important parameters in pharmacoeconomic evaluations. Although general methodology guidelines exist, there are no specific recommendations on drug cost estimation. The aim of this study was to assess current practice in the reporting and conducting of drug costing in Ireland and the UK, and make recommendations for improving future practice. METHODS: We searched the NHS Economic Evaluation Database for evaluations published in Ireland between 2001–2006. Due to the large number of UK studies, we considered only those published between 2005–2006. To assess the generalisability of our findings we included studies from Denmark, Finland and Norway published between 2001–2006. This generated 59 studies. Data were extracted on: name(s) of medicine(s), route of administration, source of drug cost, cost