OBJECTIVES: Compare and evaluate the conceptual and numerical differences between standard gamble (SG) and conjoint analysis (CA) utility weights.

METHODS: Reducing complex relationships among health outcomes to a single utility index requires strong assumptions. We compare and evaluate the required assumptions for SG and CA utility weights using numerical estimates from published SG weights and CA utility estimates from a study of acute respiratory and cardiovascular symptoms. We analyze alternative mappings of one index into the other, evaluate necessary assumptions and restrictions, and compare empirical differences.

RESULTS: Differences in the underlying metrics and information content of SG and CA utility indexes complicate mapping one scale into the other. Even when the scales can be defined comparably for a given range of outcomes, extrapolating CA utility outside this range may yield corresponding SG weights outside the 0–1 interval. CA methods facilitate including other utility-relevant health-care features, such as dosing frequency, employ cognitive tasks more familiar to patients than the SG task, and can be scaled in natural units such as money or time. However, CA utility can vary nonlinearly by duration, health-care process attributes, and individual characteristics and thus cannot generally be summed across individuals, health states, and time periods. If decision makers require a simple, aggregate utility measure, they must accept SG restrictions that break the correspondence between measured utility and actual patient preferences.

CONCLUSIONS: CA utility weights have several conceptual and empirical advantages relative to SG utility weights. The perceived usefulness and practicality of SG utility for constructing QALYs must be weighed against the potential for providing decision makers with misleading information about the net benefits of health interventions.

OBJECTIVES: In order to conduct a multi-center retrospective chart review, with the purposes of assessing resource utilization and the multiple costs associated with disease progression, a glaucoma staging system (GSS) was developed. Since no universally accepted GSS exists, particularly one that takes into account economic considerations, we tested a modified system to allow for unambiguous stage assignment for all patients and to evaluate the economic impact of progressing disease severity.

METHODS: A review of currently developed GSSs was conducted and the Bascom Palmer GSS was selected as most adaptable for economic analyses. A modified Delphi panel of physicians specializing in glaucoma treatment suggested modifications to the system. Consideration was given to practical use in retrospectively staging patients using clinical parameters available in glaucoma charts, with the end goal of assessing the economic impact of treating glaucoma. Modifications were made to ensure defined stages encompassed a complete severity range from pre-diagnosis to complete blindness. The revised GSS was pre-tested on 30 charts at one participating center in a retrospective chart review study and final modifications were made to assure certainty in patient classification.

RESULTS: The final GSS comprises six stages based principally on visual field parameters. End-stage disease was defined based on poor visual acuity and inability to perform visual fields. The finalized GSS was successfully applied to a new group of randomly selected glaucoma charts. The instrument was able to classify all identified glaucoma patients from normal to end-stage disease, and facilitated resource utilization abstraction by individual stage.

CONCLUSIONS: An improved GSS to track progression was designed which allows staging of patients from historical chart data. This GSS may be used to monitor long-term progression and is a useful tool for the purposes of assessing the economic impact of glaucoma progression in categorical stages. This GSS needs to be further tested prospectively to determine its ultimate utility in economic evaluations.

OBJECTIVES: Simple and complex computer MMs are being used to research infectious disease problems. Analysis of in vitro AB activity is usually limited to simple comparison of National Committee for Clinical Laboratory Standards (NCCLS) tube dilution SUS and MIC90. Similar ABs with similar MIC90s for a bacterium are assumed equal in activity. This mimics the problem of analyzing the survival time of patients, which is solved by statistical methods like Kaplan Meier survival table (KM) analysis. Using AB dilution instead of time in KM analyses may identify differences in SUS that cannot be found by traditional methods. A MM was developed to test this assumption.
METHODS: Computer simulations were done to illustrate scenarios where statistical modeling would find differences between antibiotics with identical MIC50, MIC90 and % SUS. The Base2 logarithm of AB dilution was substituted for time in KM analyses. The KM analyses detected differences in AB activity (P < 0.00005 to 0.0281) because KM compares across the entire range of dilutions instead of only at single points like MIC50 and MIC90. After developing the application with computer simulation the method was tested by comparing MIC data for piperacillin/tazobactam (PT) versus ticarcillin/clavulanate (TC) against Klebsiella pneumoniae (4,784 isolates) and Morganella morganii (719 isolates) from a previous study (ICAAC abstract A-57, 1996).

RESULTS: In spite of identical MIC90 and % SUS using NCCLS criteria the MM of survival using KM analyses showed TC superior against Klebsiella pneumoniae and PT superior against Morganella morganii (both P < 0.00005).

CONCLUSION: Application of this Mathematical Model and Kaplin Meier survival table analyses can discover differences in antibiotic activity hidden from traditional methods and may improve the clinical utility of in vitro data.

USE OF VARIOUS METHODS FOR COST ESTIMATION IN MULTI-NATIONAL ECONOMIC EVALUATIONS

Constenla DO
Pan-American Health Organization/World Health Organization (PAHO/WHO), Santiago, Chile

As with many economic concepts, costs are context specific, and are estimated to reflect the nature of the problem being addressed and the perspective of the decision maker. Four concepts are considered when estimating costs: scope, scale, perspective and measurement approach.

OBJECTIVE: The main objective is to assess the use and appropriateness of different costing methods and discuss issues surrounding the selection and construction of costs. A cost-effectiveness analysis was performed to evaluate the possible introduction of the pneumococcal conjugate vaccine into vaccination programmes and is used as the example.

METHODS: Resource use and unit cost data were collected in Brazil, Chile and Uruguay separately to enable country specific analysis of the data. Items of health care resource were defined a priori in standardised forms. The perspectives of the costing was the health care system and society. The price paid and social opportunity cost approaches were used for unit cost estimations. Unit costs for resource items were drawn from observational studies or constructed from detailed costing exercises in specific institutions.

RESULTS: Data availability between countries was variable. In some cases costs could not be obtained due to inter-country variations in clinical practice. Differences in the organisation and delivery of care and reimbursement of health care providers increased the variability of data quantity and quality between countries. For some items it proved necessary to use hospital charges as a proxy for hospital costs. Several problems arose when estimating hospital ward costs. Some available data sets gave a figure for hotel costs excluding any medical costs. In the majority of cases, however, it was not clear what was included in the ward costs, which varied between hospitals.

CONCLUSIONS: It is possible to use various costing methods in multi-national economic evaluations as long as methods are standardised.

METHODS FOR ASSESSING THE VALUE OF ANTIPSYCHOTIC TREATMENT: A NEW PERSPECTIVE FOR INTERPRETING SERVICE UTILIZATION

Tunis SL1, Ascher Svanum H1, Browne RA1,Wang FP1, Kinon BJ2
1Eli Lilly and Company, Indianapolis, IN, USA; 2Lilly Research Laboratories, Indianapolis, IN, USA

Commonly, research to assess the value of medication therapy in schizophrenia includes the assumption that the most effective antipsychotic agent will invariably lead to a reduction in medical services, thereby reducing total direct costs within a system of care.

OBJECTIVES: In this methods paper, we argue that quantifying decreases in certain medical costs (i.e., acute care) associated with medication treatment can be key in decisions to purchase, prescribe, or reimburse. We also propose that pharmaeconomics researchers consider the complexities of interpreting outpatient service use for those with schizophrenia.

METHODS: We discuss the notion that increased use of certain services may indicate that individuals are responding to medication, are engaged in their treatment plans, and are tending to previously neglected routine health care needs. Additionally, we provide evidence that short term increases in outpatient service use may be highly consistent with published standards for comprehensive maintenance treatment of schizophrenia.

RESULTS: We present data illustrating the importance of disaggregating service types when attempting to understand the relationship between treatment response and costs. Analyses should also include both a short-term and a longer-term perspective, to determine the extent to which an initial “investment” in medication and perhaps other (outpatient) treatment is likely to “pay off” through reductions in subsequent ER and hospitalization costs, and in individuals more able to lead productive and enjoyable lives.