**PMI 13**

**STANDARD GAMBLE AND CONJOINT UTILITY WEIGHTS: VALIDITY, FEASIBILITY, AND USEFULNESS**  
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**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 non-linearly 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.

**PMI 14**

**THE DEVELOPMENT OF A SEVERITY STAGING SYSTEM FOR ECONOMIC EVALUATIONS OF THE PROGRESSION OF GLAUCOMA**  
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**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.

**PMI 15**

**MATHEMATICAL MODEL (MM) OF ANTIBIOTIC (AB) IN VITRO SUSCEPTIBILITY (SUS) OVER THE COMPLETE RANGE OF MINIMUM INHIBITORY CONCENTRATION (MIC)**  
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**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.