COSTING METHODOLOGY ISSUES

CM1

ESTIMATING THE COSTS AND OUTCOMES FOR DIFFERENT DISEASE MANAGEMENT STRATEGIES: A CASE STUDY OF CYTOMEGALOVIRUS INFECTION AND DISEASE

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This workshop will describe a methodology for estimating the costs and outcomes for a disease under different disease management strategies. The methodology uses a combination of published data, physician interviews, national databases, and standard reference sources and can be applied in multiple countries. The methodology includes several steps including: (1) a review of the published literature on disease epidemiology, treatment and prevention efficacy, and disease management recommendations; (2) interviews with physicians managing the disease to determine their treatment practices and to ask them about the health care products and services used by their patients; (3) use of standard references and national data bases to validate the health care use data and to obtain unit costs for health care services; (4) validation of the results using patient data bases; and (5) combination of all the data using spreadsheet and decision tree software. The methodology will be illustrated using the example of cytomegalovirus (CMV) infection and disease in renal transplant patients. Three disease management strategies are compared, prophylaxis (ganciclovir), testing for virus (direct antigen testing and culture) and preemptive therapy (ganciclovir), and treatment only (ganciclovir with or without immune globulin). The cost and outcome estimates were obtained for the US and the UK. The results can be applied by health care decision makers and providers to understand the impact of different current and anticipated disease management strategies on costs and patient outcomes.

CM2

CLINICAL INTERVENTION ASSESSMENT: IMPLEMENTATION OF DEFAULT VALUES FOR EXPEDITING THE CALCULATION OF COST SAVINGS AND COST AVOIDANCES

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Our Pharmacy department has previously described the implementation of a clinical documentation system. This computerized system is utilized by pharmacists in both the inpatient and ambulatory care practices throughout our institution, and allows for the comprehensive documentation of clinical activities. A major goal of the system is to accurately capture cost avoidances as well as cost savings attributed to our staff through their day to day interactions with the patients whom they serve. The method utilized for calculating cost avoidances as previously been described, relies on hospital-specific DRG data as a proxy in order to better quantify the impact of our clinical interventions on the patients' length of stay. During the initial 5,000 interventions, a series of weekly meetings was initiated where clinical as well as administrative staff met to manually review interventions in order to quantify cost savings as well as cost avoidances. However, a significant rate limiting step for the process was the amount of time necessary to accurately evaluate the numerous interventions. Currently, more then 40,000 interventions have been entered into our electronic database. The growing numbers of interventions documented have necessitated the development of a series of drug specific defaults which allow for the automatic calculation of cost savings and cost avoidances based on our historical data. This method (1) offers a more streamlined approach to the calculation of these important outcome data; (2) decreases the time required by the financial assessment committee to evaluate the economic impact of clinical interventions; and (3) provides a more cost-effective method of obtaining this important data to provide to hospital administrators, clinical decision makers, and department staff.

CM3

MULTIVARIABLE METHODS FOR MEASURING TREATMENT COSTS IN RANDOMIZED TRIALS

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As treatment costs are increasingly determined from individual level cost data, the number of proposed multivariable methods for use in this analysis has multiplied. These methods involve estimation of multivariable cost functions that yield predictions at the individual level, conditional on interventions, patient characteristics, and other factors. What are these methods, how are they used properly, and what are the circumstances when one method is preferred over others? The purpose of this workshop will be to develop skills in conducting multivariable analysis of cost data from randomized trials. We will instruct participants in the use of ordinary least squares regression techniques and survival analysis techniques. We will discuss how non-normal cost data and censored cost data are properly and improperly handled in these methods. Participants will learn when it is appropriate to use log transformation of costs in their analysis and how to estimate unbiased treatment costs using smearing techniques. Participants will also learn how to apply the Cox proportional hazard model to analysis of costs. How does one determine which model is best given the circumstances? We will develop concepts important for evaluating the superior model: predictive validity and adherence to assumptions for unbiased estimators. We will present re-