

**OBJECTIVE:** The purpose of this study is to develop cost-effectiveness methodology in the context of a simultaneous modeling framework that provides consistent point and interval estimations.

**METHODS:** A system of cost and effectiveness equations is suggested to model the simultaneity of the underlying cost and effectiveness variables, directly producing a marginal-effect measure of the incremental cost-effectiveness ratio of two competing medical interventions in an evaluative study. Empirical estimation of the simultaneous cost-effectiveness model was conducted using a feasible non-linear least squares estimation method. A simulation analysis of hypothetical data was performed to show the superior performance of the marginal-effect approach, relative to the traditional average-effect approach.

**RESULTS:** Traditional average-effect approach has two shortcomings. First, it assumes two strong conditions: truly random distributions of all the significant non-intervention variables (both observed and unobserved) across a study's intervention and control groups, and the independence of cost and effectiveness variables. Second, it does not give a confidence interval, an important measure to assess the stochastic nature and robustness of point estimates. In contrast, the simultaneous marginal-effect approach imposed no restrictions on the randomness of the across-group distributions of all the variables. Furthermore, it takes into account the simultaneity of cost and effectiveness functions in estimation. The simulation analysis showed that the marginal-effect approach is significantly more robust, efficient, and unbiased than the average-effect approach in predicting the population true parameters assumed.

**CONCLUSION:** The simultaneous marginal-effect approach should be chosen over the conventional average-effect approach whenever data allows in assessing the cost-effectiveness of competing interventions in medical decision-making.

**PPR7****A FORMAL AUDIT OF 228 PUBLISHED COST-UTILITY ANALYSES**

Neumann P, Stone P, Chapman R, Sandberg E  
Harvard School of Public Health, Boston, MA, USA

**OBJECTIVE:** To understand the evolution and current state of the field, we conducted a formal audit of published cost-utility analyses (CUAs). The objectives were to: 1) develop and test an auditing process for judging the transparency and uniformity of analyses; 2) examine variations in practices in previously published studies; 3) determine whether methods used have been consistent with standard recommendations; and 4) investigate whether analyses have been improving over time.

**METHODS:** A systematic search of the English-language medical literature identified 228 original CUAs published from 1976 through 1997. Each article was audited independently by two trained readers using a standard data

collection form to determine quality, completeness, and clarity. Data were collected on: 1) background; 2) framing; 3) cost estimation; 4) effectiveness estimation; 5) QALY estimation; 6) reporting of results; 7) discussion; 8) cost/QALY ratios; and 9) readers' subjective assessment of overall quality.

**RESULTS:** Cost-utility analyses have covered a wide range of diseases and interventions. Most studies have adequately described the comparator intervention (83%), appropriately conducted incremental analysis (86%), discounted both costs and QALYs (72%), and performed sensitivity analysis (89%). Only 52% clearly stated the study perspective; 34% did not disclose the funding source. Methods for estimating costs, effectiveness, and QALYs have varied widely. The quality of published analyses has improved somewhat over time.

**CONCLUSION:** The results reveal an active and evolving field, but also underscore the need for more consistency and transparency. Concerns about the comparability and credibility of analyses would be allayed with more uniform methods for performance and reporting. Better peer review and independent, third-party audits of the kind used here would likely help in this regard.

**USE OF PHARMACOECONOMICS: COUNTRY-SPECIFIC ISSUES****PUP1****PHARMACOECONOMICS IN RUSSIA: FIRST STEPS**

Moissejev S  
Moscow Medical Academy, Moscow, Russia

Pharmacoeconomics is one of the most rapidly developing sciences in Western countries. The principles of economic analysis are widely accepted and used. In Russia the situation is almost completely the reverse. The economic impact of new therapies is usually ignored while the use of drugs is dictated by tradition and price. The result is non-evidence-based and non-economically-based clinical practice. The list of best selling drugs in Russia today includes several drugs unheard of in the West. Many drugs which are in high demand have no proven efficacy. Inadequate healthcare financing has put procedure on public purchasing authorities and prescribers to supply the cheapest drugs and generic equivalents sometimes of poor quality. One of the ways to solve the problem is to implement the principles of economic evaluation to policy-making and general practice though the lack of specialists in pharmacoeconomics is an obvious obstacle. Despite several signs of improvement there is still a lot to do. During the last several years a few steps were made to accomplish this goal. They include the creation of Center of Evidence-Based Medicine and Russian branch of ISPOR. Today their main task seems to be dissemination of knowledge through