

Costing Techniques: A Source of Bias in Cost-Effectiveness Analyses?

Helms LJ, Melnikow J. Determining costs of health care services for cost-effectiveness analyses: the case of cervical cancer prevention and treatment. Med Care 1999;37:652-61.

Study Overview

Objective. To estimate costs for the prevention and treatment of cervical cancer based on resource utilization and to compare those costs with published estimates and with local charges and reimbursements.

Design. Costs of the prevention and treatment of cervical cancer determined by various costing techniques (including physician estimate, charges, charges adjusted by cost-to-charge ratios, reimbursed costs, and detailed assessment of input utilization and valuation [resource-based microcosting]) were compared. Detailed resource-based microcosting estimates for cervical cancer prevention services were based on clinic staff time, use of specialized equipment and supplies, laboratory costs, and clinic overhead. Cost estimates for cervical cancer treatment were based on health maintenance organization (HMO) expenditures for cervical cancer patients and control patients. These costs were adjusted for disease stage distribution and survival rates. Published cost estimates were obtained from a systematic review of the medical literature between 1990 and 1996.

Setting and participants. For prevention costs, 3 family planning clinics; for treatment costs, 98 cervical cancer patients and 133,058 female control patients, matched by age and chronic disease score in a staff-model HMO.

Main outcome measures. Estimated costs for prevention and treatment of cervical cancer. Cost-to-charge and cost-to-reimbursement ratios.

Main results. Estimated costs of cervical cancer prevention

and treatment services varied considerably across and within the range of costing methods used in this analysis. Detailed resource-based costing techniques suggest that cervical cancer prevention costs are generally lower than those previously published in the literature, whereas treatment costs may be higher.

Conclusion

It is both feasible and appropriate to estimate medical costs using resource-based microcosting in cost-effectiveness analysis. Use of other methods may result in less accurate cost estimates

Commentary

This is primarily a "methods" paper designed to illustrate alternative means of collecting and analyzing data for a cost-effectiveness analysis. To that end, Helms and Melnikow demonstrate the greater validity of resource-based microcosting compared with other costing methods. Perhaps more importantly, their results also suggest that the costing techniques used in cost-effectiveness analyses, which are used by private and public decision makers, may be less accurate or generalizable than is appropriate.

Applications for Clinical Practice

The results of this study imply that physicians and health care providers should be wary of cost-effectiveness analyses in which the costing techniques are not transparent. Where techniques are transparent, users should carefully monitor the inputs to ensure that they are consistent with their regional or local conditions.

Copyright 1999 by Turner White Communications Inc., Wayne, PA. All rights reserved.