



Variations in cost calculations in spine surgery cost effectiveness research

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Learning Objectives

By the conclusion of this session, participants should be able to: 1) Understand how costs are calculated, the terms utilized, and perspective taken in cost effectiveness research and 2) Discuss why it is essential that researchers be transparent about how costs are calculated and from what perspective.

Introduction

Cost effectiveness research in spine surgery has been a prominent focus over the last decade. However, there has yet to be a standardized method developed for calculation of costs in such studies. This lack of a standardized costing methodology may lead to conflicting conclusions on the cost effectiveness of an intervention for a specific diagnosis. The primary objective is to systematically review all cost effectiveness studies published on spine surgery and compare and contrast various costing methodologies used.

Methods

All cost effectiveness analyses pertaining to spine surgery were identified using the cost-effectiveness analysis (CEA) registry database (Tufts Medical Center, Institute for Clinical Research and Health Policy) and the Medline database. Each article was reviewed for the study subject, methodology, and results. Data were collected from each study, including costs, intervention, cost calculation method, perspective of cost calculation, and definitions of direct and indirect costs if available.

Results

Thirty-seven cost effectiveness studies on spine surgery were included in the present study. Twenty-seven (73%) of the studies involved the lumbar spine and the remaining ten (27%) involved the cervical spine. Of the 37 studies, 13 (35%) used Medicare reimbursements, 12 (32%) used a case costing database (CCD), 3 (8%) used cost-to-charge ratios (CCRs), 2 (5%) used a combination of Medicare reimbursements and CCRs, 3 (8%) used the National Health Service (NHS) reimbursement system, 2 (5%) used a Dutch reimbursement system, 1 (3%) used the United Kingdom Department of Health data, and 1 (3%) used the Tricare Military Reimbursement system. Nineteen (51%) studies completed their cost analysis from the societal perspective, 11 from the hospital perspective (30%), and 7 (19%) from the payer perspective. Of those studies with a societal perspective, 16 (42%) reported actual indirect costs.

Conclusions

Changes in cost have a direct impact on the value equation for concluding whether an intervention is cost effective. It is essential to develop a standardized, accurate means of calculating costs.

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