PMC9

30 YEARS OF COST-EFFECTIVENESS ANALYSES: A BIBLIOMETRIC REVIEW OF ARTICLES PUBLISHED IN THE ECONOMIC AND MEDICAL LITERATURE: 1976–2005

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Cost-effectiveness analysis (CEA) presenting a cost/QALY ratio is considered the gold standard for economic evaluations in health care. Despite the proliferation of CEA research, there has been no detailed study focusing on the bibliometric properties of this literature. To describe and analyze trends in publications and co-authorship in the CEA literature from 1976–2005. We used the Tufts-New England Medical Center registry of original CEAs published through 2005 http://www.tufts-nemc.org/cearegistry/). For each article we recorded the year of publication, journal's name, the number of contributing authors and their names. Authors were assigned a credit based on their perceived contribution to the study (1 credit point for the first and last authors, $^1/_2$ point for the second author, and 1/n credit points for all other authors). We calculated the Author's Contribution Index (ACI), by dividing the total credit points by the number of studies published by the same author. Approximately 1150 studies have been published in 360 journals over the past 30 years, with an increase in the number published annually from 18(±26) in 1976–2000 to 138(±46) in 2001–2005, $p < 0.0001$. The mean number of contributing authors was 4.6(±2.4) and increased from 4.3(±2.3) to 4.8(±2.5), $p < 0.0001$ over that same time interval. Medical journals were characterized by a higher number of co-authors, as compared with the economic and health policy literature: 4.7(±2.4) vs. 4.2(±2.1), $p = 0.004$. The lowest number of co-authors (3.6) was in Value in Health and Medical Decision Making, and the highest in Circulation (7.7). The most prolific authors were affiliated with Harvard and Tufts Universities. **CONCLUSIONS:** The CEA literature continues to proliferate. Co-authorship trends seem to follow the rapid increase in the mean number of authors found in the health economics and medical literature. Further research is needed to examine journals' and authors' concentration trends, and dissemination of CEA results.

PMC10

THE DEVELOPMENT OF COST-EFFECTIVENESS INDICES WITH EQUITY IMPLICATIONS FOR THE ECONOMIC EVALUATION OF HEALTH CARE

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The incremental cost-effectiveness ratio (ICER) with number of dollars per quality-adjusted life year (QALY) has been extensively used in cost-effectiveness analysis (CEA) for improving efficiency in health care, but there is a lack of simple CEA indicators to take the equity issue in health into consideration. In this paper, by adjusting the ordinary ICERs with the quality-adjusted life expectancy (QALE) of the age- and gender-matched general population, we developed the CEA indicators based on and/or weighted by relative health gap to improve the distributive justice. If we collect the quality of life and survival data to estimate the QALY gained by a certain intervention for a specific disease, then the CEA indicators based on and/or weighted by relative health gain can also be developed to reduce the unintended inequity. The proposed six new CEA indicators with equity implications were empirically calculated for comparisons among the diseases of end stage renal disease, acquired immune deficiency syndrome, liver cancer, and breast cancer to demonstrate their applicability.

PMC11

ACCOUNTING FOR THE PLACEBO RESPONSE IN COST-EFFECTIVENESS ANALYSIS

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Defined as the psychophysiologic response associated with placebos, the placebo effect is of considerable interest to researchers and clinicians. To ensure that study participants remain blinded to treatment, a placebo must resemble the investigational product in all aspects except for physiological activity: it should have the same shape, colour, delivery mode, smell and taste. To produce a placebo with all of these qualities, the development cost and, thus, the daily cost of providing them to patients in a clinical trial, can be significant. Cost-effectiveness analyses (CEAs) typically use efficacy and safety data from RCTs. In fact, phase 3 RCT data are often considered the most robust data source in CEAs. By subtracting the clinical effect in the placebo arm from the clinical effect in the active arm, CEAs remove the placebo response from the effectiveness side of the equation. However, the same method is not applied to the cost side: instead of subtracting from the cost of active treatment, the cost of placebo is ignored. This leads to an inaccurate estimation of the incremental cost of treatment relative to the incremental effects and, consequently, of the incremental cost-effectiveness ratio (ICER). We propose a method whereby both the costs and effects of placebo are incorporated into CEA. A CEA of Sativex in oncology pain will be used to illustrate the proposed approach. Results will be presented. In recognition of the clinical benefit that can be effected via the placebo response, RCTs have been designed to measure this response and to deduce the true effect of an active therapy. CEAs, which typically use data from these RCTs, should adopt a similar approach. Economic analyses should not only consider the effect but also the costs of placebo to achieve a more accurate prediction of the ICER for an active therapy.

PMC12

MEASURING ECONOMIC AND CLINICAL OUTCOMES ASSOCIATED WITH TELE-ICU MONITORING

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OBJECTIVE: Patients in adult intensive care units (ICUs) require multidisciplinary care that frequently result in substantial morbidity, mortality, and costs. Telemedicine has been used to provide remote intensivist monitoring for ICUs. We measured the economic and clinical outcomes associated with Tele-ICU monitoring in 6 ICUs (5 hospitals) across the Houston metropolitan area. **METHODS:** We assessed the cost and effectiveness of Tele-ICU by comparing the economic and clinical outcomes in the period after the full implementation of the Tele-ICU (post period) with the economic and clinical outcomes in the baseline period before the introduction of the Tele-ICU (pre period). The cost analysis in this study adopts a hospital perspective because the decision to implement a Tele-ICU is made at the hospital or health system level. Costs were measured using hospital costs and the cost of operating the Tele-ICU. Hospital costs were computed using average daily ICU costs and floor costs for patients in each ICU during the two study periods using individual patient data (4390 patients). ICU and hospital length of stay (LOS) and ICU and hospital mortality were obtained from chart reviews. **RESULTS:** Average