MedtecHTA
Methods for Health Technology Assessment of Medical Devices: a European Perspective

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ECONOMIC EVALUATION AND HTA

Executive Summary

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About MedtecHTA

The MedtecHTA project (Methods for Health Technology Assessment of Medical Devices: a European Perspective) aims at improving the existing methodological framework within the paradigm of Health Technology Assessment (HTA) for the assessment of medical devices, and to develop this framework into a tool that provides structured, evidence-based input into health policies. The research activities are conducted by a consortium of six European Universities and one Scientific Association. The project is funded under the European Union's 7th Framework Programme as Small or Medium-Scale Focused Research Project (2013-2015).

About the Authors

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Executive summary

Background

Limited resources and limitless health needs compel policymakers to increasingly rely on economic evaluations and Health Technology Assessment (HTA) to inform their decisions about coverage and reimbursement. However, differences in methodologies and approaches used to create economic evidence about health interventions might impact the final recommendation and diffusion of innovative technologies.

Aim

The aim of this study was to develop a theoretical framework to compare economic evaluation analyses and HTA reports. To do so, two case studies were used: Transcatheter Aortic Valve Implantation (TAVI) and Implantable Cardioverter Defibrillators (ICDs).

Methods

The relevant documents were identified by searching the University of York's Centre for Reviews and Dissemination (CRD) HTA and NHS Economic Evaluation Databases and PubMed. Searches were supplemented through informal electronic browsing on search engines (i.e., google) and screening of the references cited in the documents previously identified (i.e., cross-referencing).

We excluded from data extraction HTA reports published by non-European agencies and reports published before the first evidences on cost-effectiveness of TAVI because those reports were based on clinical evidence only.

Included HTA reports were reviewed at four levels: (i) methodology of the study (i.e., comparator, target population, patient selection criteria, population sample, type of economic evaluation used, sources for clinical evidence and for costs, model design, time horizon, cycle length, type of sensitivity analysis), outcome measures (i.e., final, intermediate), discount rate for benefits, costs considered in the analysis, discount rate for costs; (ii) consideration of medical devices' (MDs) intrinsic features (i.e., learning curve, incremental innovation, dynamic pricing, organizational impact); (iii) conclusion (i.e., final recommendation, incremental costs, incremental effectiveness, Incremental Cost Effectiveness Ratio (ICER), Willingness to Pay (WTP) threshold, probability of cost-effectiveness).

Main Findings

A total of 23 studies on TAVI (15 economic evaluations and 8 HTA reports) and 23 studies on ICDs (19 economic evaluations and 4 HTA reports) were identified. In both cases only one HTA report included the economic dimension. Despite the differences in methods (i.e., perspective, costs considered, time horizon, discount rates, willingness-to-pay threshold), we found many commonalities between economic evaluation analysis and HTA reports for transfemoral TAVI and ICD. On the contrary, the retrieved economic evaluations show conflicting results due to differences in the methodology. The majority of HTA reports published by European HTA agencies did not consider the economic dimension and based their recommendation on clinical aspects only. Most of the retrieved documents did not take into account MDs intrinsic characteristics (i.e., learning curves, incremental innovation, dynamic pricing, organizational aspects) in the baseline model, but they were considered in the sensitivity analysis. The most frequently considered dimensions for TAVI were learning curve and oranizational aspects (8 studies for each), while for ICDs was incremental innovation (7 economic evaluations).

Implications

Our results support the view that economic evidence is underused by policymakers to make robust coverage and reimbursement decisions for medical devices. The potential generalizability of these findings requires further comparative analyses.