The organizational impact of medical devices:

Report on survey methodology

WORK PACKAGE 6 – DELIVERABLE D 6.2

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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).

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Executive Summary

Background

Besides raw numbers on the usage of new technologies, information on the determinants of their adoption and diffusion is fundamental to health technology assessment (HTA) reports. Basically a great variety of research is available studying the determinants of adoption and diffusion of health care innovations. However, only a few studies focus on cardiovascular devices and virtually all of them neglect the important role of individual factors driving the uptake.

Objectives

The aim of this work package is to determine individual and organizational factors that foster or hinder the adoption of medical devices. Furthermore, our objective is to gain new insights on the physicians' general motivation for adopting medical devices and to evaluate the importance of individual factors in the organizational context.

Methods

A four step approach is used to determine individual and organizational factors of adoption of medical devices. First, an online survey was developed based on an extensive literature review. This included the definition of the medical area of analysis as well as the identification of four criteria for the selection of medical devices. Second, a pilot study will be conducted including 30 cardiologists from five European countries to test the performance of the online survey. Within the 6-week pilot, feedback on survey content, survey structure and item wording will be gathered using a standardized information collection tool. The feedback will be evaluated and implemented accordingly. Third, the survey will be sent out to more than 80,000 members of the European Society of Cardiology followed by two reminders to increase the participation rate. Fourth, the collected primary data will be analyzed using separate hurdle and Cox proportional hazard models. The former will be applied to address the question of which factors drive the first adoption and the magnitude of the adoption of the cardiovascular devices while the later will be utilized to study the factors influencing the time from market introduction of a cardiovascular device to its first adoption. Further tests will be carried out to address possible statistical problems such as endogeneity in the regressors.

Results

The developed survey contained 48 items to measure the determinants of the adoption. Basis of the survey was a preceding review of the determinants of the adoption/diffusion of innovations (see work package 6.1). Seven cardiovascular devices, that is drug eluting stents, TAVI, renal denervation, Mitra Clip, Left Atrial Appendage closure devices, implantable cardioverter-defibrillators, and cardiac resynchronization therapy, were selected for analysis based on the criteria that they have a large (economic) impact on healthcare systems in terms of medical evidence and costs, and different characteristics according to their diffusion stages. The ongoing 6-week pilot study already led to improvements especially in the design, administration, and the wording of the online survey.

Future prospects

The data will be collected in autumn 2014. Data analysis is expected to be finished in the first half of 2015.
This large scale study is the first that will contribute to the HTA framework by using primary data to identify factors that are relevant for the adoption of medical devices. Furthermore, it will help to estimate the importance of individual factors for the adoption of medical device in the context of organizational and environmental determinants and it may serve as a guide for researchers who plan on conducting similar studies in the medical field.
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