



TropEd Curriculum - Master in International Health

Improving Health Technology Management: Development of a model for the implemen- tation of an essential information system for medical devices in low- and middle-income countries

by Claudio Zaugg



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Abstract

The rapid development in technology and knowledge has lead to significant improvements in the performance of health care systems. The constant increase in the variety and complexity of available health technologies requires good management instruments to allocate resources efficiently. Especially in low- and middle-income countries, there is a lack of information on medical equipment, management tools and -skills. These shortcomings cause misdirected investment and wastage of scarce resources. Thus, the present thesis aims at advocating a simple, flexible, and low-cost tool that is – in conjunction with training provision – capable of improving Health Technology Management in such countries.

The topic of Information Systems for Medical Devices was first investigated with interviews and an online-survey among international health technology professionals. The results lead to the definition essential system requirements and the description of common problems. Seven management- and inventory tools were evaluated against the identified criteria. Additionally, the collected information was used to elaborate training material for capacity building of administrative and technical personnel.

The survey conducted (n=27) has shown that 66.7% (95% CI: 0.5 – 0.86) of the respondents would appreciate a new, generic information system for medical devices. Most experts rated flexibility and adaptation to local needs as very important features. None of the existing software evaluated was able to meet the claim for flexible and open systems. For this reason, a new web-based open source application (openMEDIS) was created in the frame of this thesis. Along with the software, six thematic training modules on e.g. Health Technology Management, nomenclature use, data management and -analysis, etc. were developed.

Especially in resource poor settings, the combination openMEDIS application/capacity building will be the foundation for better Health Technology Management and eventually lead to a better quality of care. At the present stage, the approach supplies theoretical evidence only. In order to prove the system's effectiveness an implementation and validation study using performance indicators is urgently needed.

Keywords: Health Information Systems, Health Technology Management (HTM), Medical Devices Inventory