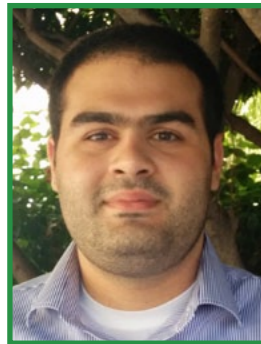


Health Technology Assessment: A New Paradigm in Healthcare Decision Making in Lebanon



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Introduction

The introduction of new technologies in healthcare is one of the main contributors to the increase in health care expenditure. In addition, the fast introduction of new technologies in healthcare raises concerns related to their respective efficacy and safety (Sa'aid, Stewart & England, 2011). Sprouting from these concerns, health technology assessment (HTA) activities have been developed and practiced in many countries. This paper will layout the importance of utilizing the concept and application of health technology assessment in the process of health technology appraisal.

Health Technology Assessment (HTA):

The WHO classifies health technologies as one of the six building blocks vital for all health systems, along with financing, leadership/governance, information, health workforce and delivery (Doaee et al, 2012b). Health Technology Assessment (HTA) is an essential tool for a comprehensive and informed decision-making in the healthcare technology (WHO, 2013). According to the International Society of Technology Assessment in Health, the definition of HTA is “the systematic evaluation of the properties, effects and/or other impacts of health care

technology.” (Hailey, 2003). The process of implementing HTA is through a multidisciplinary approach that covers information about the clinical, economic, organizational, social and ethical issues related to the use of a health technology such as drugs, medical devices and procedures in a methodical, translucent, impartial, full-bodied manner (Hailey, 2003; WHO, 2013). HTA seeks to facilitate and provide safe, effective, health policies that are patient centered and revolves around the achievement of best value (WHO, 2013). According to Kristensen (2006) the implementation of HTA has been considered as a bridge between research and decision making.

For almost 4 decades, health technology assessment practices have been utilized in developed countries (Doaee et al, 2012a). In Europe, HTA programs are recognized as an important constituent for the advancement in the quality of health care delivered to the public through health systems (Garrido, Kristensen, Nielsen & Busse, 2008). The adoption of HTA activities is also present in developing countries (WHO, 2013; Kriza et al, 2014). In developing countries, especially, resource-poor settings the usage of health technologies could be determined with the absence of evidence based information, this would lead to the use of technologies which do not address the health needs at a certain context and therefore, result in the inefficient use of resources (Chalkidou, Levine & Dillon, 2010; Kriza et al, 2014). Therefore, in such settings, HTA activities are carried out in order to enhance the quality of health care and guarantee good value for money investments in any setting (Kriza et al, 2014). In sum, Caputo (2011) stated that HTA is at the heart of cost containment strategies through conducting analysis on efficient use of health technologies.

Health technology assessment has been instrumental in striving to achieve one of the WHO's objectives, which is to ensure improved access, quality and use of medical products and technologies (WHO, 2011). Chalkidou et al. (2013) stated that it is imperative that HTA should be an



important basis in guarantying universal health coverage in countries through the efficient and equitable provision of health care resources. Additionally, Doaee et al. (2012b) has also stated that HTA practices have key implications on universal health coverage.

Conducting an HTA process:

HTA procedures are conducted by interdisciplinary groups using explicit methodical frameworks portrayed from an array of expertise. Depending on the topic and scope of assessment, the various disciplines and expertise may be needed: medical doctors, public health specialists, pharmacists, pharmacologists, clinical engineers, biomedical engineers, epidemiologists, biostatisticians, financial analysts, quality analysts, computer scientists, lawyers, economists, and patient or patient representatives (Velasco et al., 2002; Goodman, 2004).

The reasons for conducting health technology assessment on drugs, medical devices, equipment and supplies, medical and surgical procedures, support systems and managerial systems; could be the introduction of new technology, changes in existing technology, safety concerns, ethical

considerations, cost and economic concerns, ethical analysis, social aspects, legal aspects, investment decision and structural/organizational changes (Velasco et al., 2002; Goodman, 2004; Battista, 2006).

HTA activities can be performed in various levels within healthcare systems:

- Macro level: decision making on the government level through governmental agencies and institutions.
- Meso level: decision making on administrative level through health authorities, agencies, hospitals.
- Micro level: decision making performed at the clinical practice level.

At each of the aforementioned levels, the decision making process entails the involvement of clinicians, economists, epidemiologists, clinical engineers, etc. (Derrico et al., 2011).

HTA- the Evaluation Process:

In order to carry out a comprehensive and successful health technology appraisal process, several tasks have been conducted. The first step to be carried out is performing a extensive literature review on the technology being appraised, various clinical search engines could serve for such a purpose (HTAi, EUnetHTA, Euroscan), institutes such as ECRI and FDI could be informative sources as well. The second step which would be identified by the literature is the setting and defining assessment elements by assigning key performance indicators (KPIs) to

know how to measure the needed outcome and impact from each technology to be acquired. The third step would be assessing the value of the indicators in respect to each of the alternative technologies being appraised, and the last step would be the results and formulation of a HTA report that would include: document summary, description of the technical characteristics and operating modalities of the technologies at stake, literature review findings, description of the assessment elements and KPIs, the process of assigned values and ranking of each alternative and finally, the recommendations of adopting the optimal choice (Derrico et al., 2011).



Although the process of health technology assessment practices entails a multidimensional field of expertise which responds to the need for conducting an informed decision in acquiring new innovations in health technology in an effective and efficient manner; the technical evaluation is heavily dependent on clinical engineers (Derrico et al., 2011). The American College of Clinical engineering definition of a clinical engineer is “a professional who supports and advances patient care by applying engineering and management skills to health care technology.” Clinical engineers would for example assume a key role along with the coordination with of biomedical engineers and biomedical technicians or physicians whenever deemed necessary in the technical appraisal of bio-imaging equipments by assessing an equipments function according to improvement in technical performance (e.g. spatial resolution), safety issues for operators and patients (e.g. x-ray dose reduction), and changes in biological or physical operating principles (e.g. fMRI). In addition, the operators and patient safety concern extend to rely on operational, technical and organizational set-up and preparedness, for example: the use of bare minimum dose setting for x-ray examinations, implementing magnetic shielding walls and ceilings in areas that are subject to x-ray exams, and limiting access

to areas of x-ray examination (Derrico et al., 2011).

Challenges in Adopting HTA in Lebanon:

Lebanon, being a middle income country faces certain challenges in fully adopting HTA (WHO, 2013). The lack of formal endorsement and implementation of legislative policies regarding health technologies, national regulatory authorities (NRA) are generally weak, the absence of health technology assessment (HTA) systems, lack of transparency leading to unreliable data, improper management of resources, having 30% of MOH budgets being spent on medical products and lack of procurement guidelines (WHO, 2013).

The Lebanese health sector is largely dominated by private providers which in turn results in the implementation of high technologies with no regulation, absence of proper assessment for the need of technology, lack of systematic appraisal of its safety and effectiveness or cost efficiency therefore, leading to the high cost in the delivery of healthcare (Akoum, 2014)

Roadmap for Implementing HTA in Lebanon:

Lebanon is currently recognizing the need to establish an

efficient national system in partnership with the involved stakeholders for proper assessment of health technologies in order to provide adequate needed, up-to-date, high quality and cost effective healthcare services (Akoum, 2014). The MoPH aims to set out national policies on HTA entailing planning, needs’ assessment, selection, standardization, safety, cost efficiency, procurement process, inventory management and maintenance (Akoum, 2014).

Conclusion:

Health technology assessment has been seen to be as a strategy that paves the way to a better equitable and efficient access to healthcare. It has been also identified to save costs on the healthcare system, therefore, allocating resources in a more efficient manner. In conclusion, health technology assessment is an imperative on-going process that must be utilized both at the national and hospital levels. The importance of implementing HTA activities in Lebanon has been identified by the Ministry of Public Health as well as by various university medical centers in Lebanon.

Note: An upcoming paper on hospital-based Health Technology Assessment (HTA) will be published on Human & Health Journal in the July Edition.

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