



Implementation of Hospital-Based Health Technology Assessment in Hospital X

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ABSTRACT

The development of health technology brings improvements in safe and effective health services so that the quality and life expectancy of patients increases significantly. The financing spent on health technology in various developed countries tends to increase along with the implementation of more modern medical technology which encourages increased investment in health technology which contributes to the increasing cost of health services.

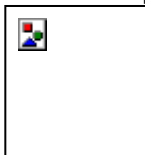
HTA is a health technology screening is a systematic

evaluation of the properties and effects of health technologies, addresses the direct and intended effects of these technologies, as well as their direct and unintended consequences, and is intended primarily to inform decision making regarding health technologies. The purpose of this study is to analyze how the implementation of HB-HTA works in hospitals, a basic model framework is needed to explore the types of good practice criteria that are in accordance with the HB-HTA process. This research is qualitative research with a case study design. Data were collected utilizing observation and in-depth interviews. This research data collection was carried out by observing the implementation of the Hospital-based Health Technology Assessment at hospital X and Secondary data is data that supports and relates to research variables or research problems. Hospital based HTA is a guideline for decision making in the selection of health technology in Indonesia according to existing regulations, although technical regulations up to the hospital level are not yet complete. It is hoped that in the development of Hospital Based HTA in Indonesia, Clinical Engineers in Indonesia will have a better role in accordance with their competencies so that regulatory support from the government is needed.

Keywords: Health Technology, Hospital, Technology Assessment in Hospital

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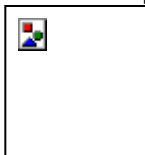
Introduction

In a global context, there has been an increase in financing in the health sector in the last decade (Cantor-Cruz et al. 2022). This is due to several things, one of which is an increase in spending in the health sector to meet the needs of medical equipment in health facilities. According to data from the European Federation of Pharmaceutical Industries and Associations (EFPIA) in 2020, there are more than 500,000 medical devices available and there is an increase in pharmaceutical spending on patients by approximately 4% per year for the European region and 11.3% for the Americas (EPFIA 2016). Health technology also plays a role in significantly increasing healthcare costs and is often not matched by comparable clinical outcomes. Adequate information is needed for decision-makers in hospitals so that wiser decisions can be made (Sampietro-colom 2016). It is in this context that the Health Technology Assessment (HTA) was created, to assess the balance between the advantages/benefits of new technology compared to the disadvantages, risks, and costs incurred (Artun and Şahin 2021).

In Indonesia, HTA was first formed as part of the policy analysis unit of the Directorate General of Medical Services, Ministry of Health in 2003 under the name of the Health Technology Screening Technical Team. Although not widely published, until 2013 the Health Technology Screening Technical Team had conducted dozens of health technology studies (but without formal health economic analysis) (Kemenkes RI 2017a). In 2017, the Ministry of Health issued Minister of Health Regulation number 51 of 2017 concerning Guidelines for Technology Assessment Health (Health Technology Assessment) in the National Health Insurance Program. This regulation was made with the consideration that for quality control and cost control in health services to support the National Health Insurance Program, it is necessary to conduct a health technology assessment that is oriented to aspects of patient safety, the effectiveness of action, conformity to patient needs, and cost-efficiency (Kemenkes RI 2017b).

This research was conducted at hospital X, which is a type B hospital and is fully accredited with SNARS version 1.1. Private Hospital X is one of the private hospitals in the city of Semarang. From the results of the preliminary study, it was found that hospital X still had several facts in the process of adopting new health technology at Hospital X. Decision making in the adoption of new health technology was not well structured (Dai and Liao 2021). Decision-making in the adoption of health technology is carried out only based on a simple economic evaluation so the potential for inaccuracies in decision making on the adoption of new medical technology is very common (Katyal et al. 2022). There are health technologies that do not provide the clinical benefits previously predicted. Another problem that arises is the investment made by the hospital after adopting new health technology, but it never reaches the Break Event Point. In addition, there are several pharmaceutical supplies that then stagnate and become expired. Then there is also a big potential risk for the hospital after the process of adopting medical treatment (Patel, Ayers, and Ford 2021).

In analyzing how the implementation of HB-HTA works in hospitals, a basic model framework is needed to explore the types of good practice criteria that are in accordance with the HB-HTA process (Herawati et al. 2020). The model used in hospital X in the development of HTA is the European Foundation for Quality Management (EFQM) 2020 model because this



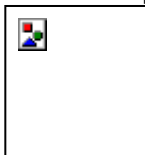
model will provide a common understanding and language between hospital management and HB-HTA units (Fonseca, Amaral, and Oliveira 2021). The EFQM model is one model that is widely used in health services in improving the quality of its services (Almomani et al. 2021). The modeling will be used as a means of assessing the application of HB-HTA because it will be able to provide a more objective assessment of what things affect the application of HB-HTA in hospital X.

Methods

This research is qualitative research with a case study design. Data were collected utilizing observation and in-depth interviews with Hospital Owners, Directors, the Health Technology Assessment Team, Heads of Installations, Unit Heads, Doctors in Charge of Patients, Medical Committees, Heads of Medical Staff Groups, and other medical professionals. Qualitative research aims to explore more in-depth information or to obtain a detailed explanation of a phenomenon or problem. In addition, by using a qualitative design, the research can adjust to the conditions in the research environment, the existence of multiple realities, and adjustments to existing values. The reason for choosing this type of qualitative research is that researchers want to explore information about the implementation of the Hospital-based Health Technology Assessment in hospital X.

This research data collection was carried out by observing the implementation of the Hospital-based Health Technology Assessment at hospital X, observations were carried out in a certain period provided that each subject was only observed once or made observations once on several variables at the same time. Primary data is data that comes from direct research subjects as a source of information in research (Sampietro-colom 2016). Primary data is obtained from observation and in-depth interviews. Observations were made on the activities of the Health Technology Assessment team of Hospital X. In-depth interviews were conducted with research subjects, both key informants and triangulation informants. In-depth interviews with key informants aim to determine the implementation of Hospital-Based Health Technology Assessment, while interviews with triangulated informants aim to confirm the information provided by key informants and obtain supporting data. Secondary data is data that supports and relates to research variables or research problems. Secondary data in this study were obtained from a review of documents related to the implementation of the Hospital-Based Health Technology Assessment in hospital X.

There were three respondents in this study, the first based on job assignment status, namely people who were active and directly involved with the Hospital-Based Health Technology Assessment process at Hospital X. The second was based on position status, namely people who had important positions and roles in the Hospital-Based process Health Technology Assessment in Hospitals. The third is based on the status of authority, namely people who have the authority to make decisions and are involved in Hospital-Based Health Technology Assessment.



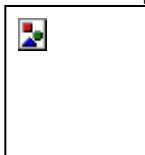
Results and Discussion

Variables of Organizational Culture and Leadership

Leadership is a natural and spontaneous process that gives meaning to organizational mechanisms (Alsalman et al. 2021). Organizational growth can be achieved by working for a common goal and commitment from the leaders of the organization. Leadership is not only required to be carried out at the top level of the organization but is carried out at every level of the organizational hierarchy. Leadership is needed in organizations to innovate, create enthusiasm, create focus, motivate and align people. The results of the interview in terms of culture and leadership variables are presented in Table 1 below,

Table 1. Interview Results from Aspects of Organizational Culture and Leadership on Hospital Employees X

Question	Conclusion Main Informant	Conclusion Triangulation Informant
What is the purpose of forming an HTA team in a hospital?	1 main informant stated that the task of the HTA team is to provide recommendations in terms of evaluating health technology in hospitals to the directors as part of quality control and cost control efforts.	Provide recommendations in terms of the assessment of health technology in hospitals to the management.
Obstacles in achieving the goals of forming HTA teams in hospitals?	1 main informant revealed that the obstacles in achieving achievement were part-time team members and concurrently other jobs at the hospital and the quality of evidence was still limited.	The quality of recommendations still needs to be improved so that they are more relevant to conditions in the hospital
What is the form of support from the board of directors?	1 main informant stated that the board of directors fully supports the HTA team	Establish and ensure the operation of the HTA team Request a report from the HTA team
What is the organizational model of the HTA team?	1 key informant stated that the current organizational structure of the HTA team consists of: Chairperson, Deputy Chairperson, Secretary, and 3 Members. The HTA team is allowed to form an ad hoc committee	1 key informant stated that the current organizational structure of the HTA team consists of: Chairperson, Deputy Chairperson, Secretary, and 3 Members. The HTA team is allowed to form an ad hoc committee

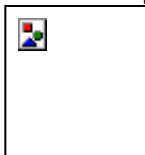


From the results of in-depth interviews, it was found that the purpose of forming the HTA team at Hospital X was to provide recommendations in terms of assessing health technology at the Hospital as an effort of quality control and cost control (Wahba et al. 2022). The health technology in question can be in the form of a drug, medical treatment/procedure, medical equipment, and so on which will be adopted in the hospital (Fernandes et al. 2022). There are several obstacles in the effort to achieve this goal, among others, the members of the HTA team are all part-time and concurrently working in other hospitals and the quality of evidence used is still limited. Most of this evidence is obtained from distributors or manufacturers of the medical technology, so this could potentially lead to bias in the review effort (Shayevitz et al. 2020).

However, this team received support from the directors and management at hospital X (Cristiano, Ulgiati, and Gonella 2021). The roles of the directors towards the HTA team at hospital X included, among others, forming the HTA team, selecting hospital staff to be involved in the HTA team, setting goals for the HTA team, authorizing the HTA team to carry out the HTA process at the hospital, validate the HTA teamwork guidelines, approve the budget plan for the HTA team's operations, request recommendations from the HTA team on plans/requests for new health technology at the hospital as well as provide feedback to the team HTA (Grimaz, Ruzzene, and Zorzini 2021).

The HTA team's authority is to provide Health Technology Assessment recommendations in a report that is accessible to all stakeholders (Parida et al. 2022). The responsibility of the HTA team is to report to the Board of Directors through the Executive Director and the President Director the results of the Health Technology Assessment conducted at the hospital. In carrying out its functions, this team can form a panel of experts consisting of professionals related to the field of study to be carried out. This panel of experts may cover all areas of the medical profession (specialist doctors and dentists, general physicians and dentists, nurses, radiographers, laboratory personnel, nutritionists, physiotherapists, psychologists, economists and accountants, health lawyers, religious leaders, and others. etc). This panel of experts will assist the HTA team in carrying out their duties (Cummins 2005).

Based on the organizational model of the HB-HTA unit at the hospital, the HTA team at hospital X is an independent HB-HTA unit (Gardner and Oswald 2004). This unit acts internally within the organization with very formal procedures and is generally not influenced by other national or regional HTA organizations (Shkolnikov et al. 2007). The HTA team at hospital X still has a lot of room to grow (Jones 2005). The evolution towards more mature HB-HTA units is generally characterized by increasing levels of formalization and specialization in the process and by the progressive alignment between strategies and objectives to be achieved by national or regional HTA activities and hospital-level strategies. In this evolution, the HB-HTA unit will gain internal and external legitimacy until it is fully recognized as key in the hospital's development strategy and also seen as a partner at the national or regional level. Hospitals, as health care organizations, need explicit rules in terms of governance and authority from each of their structures. In the case of the HB-HTA unit, clear governance consists of establishing its place in the general organization of the hospital and defining how its work relates to the hospital



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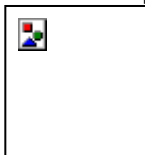
departments. Most HB-HTA units have a clear position in the organizational chart (for example, a formal unit that works directly for the President Director or under the Directorate of Research and Innovation). The authority of the HB-HTA unit differs between hospitals. In a hospital, such as a hospital X, there is a regulation that it is mandatory to consult the HB-HTA unit if there is a new medical technology considered for investment, while in other hospitals, this activity is voluntary.

Variable of Performance and Transformation Driving

An organization can still function well today and in the future, it requires a combination of performance drivers and transformation of the organization (Apinpath et al. 2015). The key elements in enabling performance and transformation are innovation and technology, the growing importance of data, information, and knowledge, and the focused use of critical assets and resources. The results of the interview in terms of performance and transformation driving variables are presented in Table 2 below,

Table 2. Interview Results of Performance and Transformation Driving on Hospital Employees X

	Conclusion Main Informant	Conclusion Triangulation Informant
How is the HTA assessment flow in the hospital?	2 main informants stated that the board of directors had determined the review flow by the HTA team	The Board of Directors received an application for the procurement of new health technology. The Board of Directors assigned HTA to review following the HTA teamwork guidelines at Hospital X. The HTA team conducted a study with the final results in the form of recommendations and submitted it to the board of directors. The Board of Directors studied the results of the HTA team's study and made a decision. If deemed necessary, you can call the HTA team and related parties for clarification
What are the criteria for selecting health technology to be adopted in a hospital?	2 main informants stated that several things are used as principles for selecting health technology adopted in hospitals, among others, high volume, high risk, high cost, high variability, urgency, impact on the improvement of health service improvement, cost, level of acceptance	The selection of new technology will be based on the principles: high volume, high risk, high cost, high variability, the level of urgency and importance in hospitals, and the impact of new services in hospitals from a financial and economic

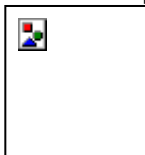


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		perspective. Because hospital X is a religious hospital, it must also consider religious, ethical, political, and social factors.
How is the knowledge development and competency improvement of the HTA team at the hospital?	2 main informants stated that the hospital carried out knowledge development and competency improvement by sending the HTA teams to attend seminars and the training.	The HTA team is sent to training and seminars according to the hospital work program
How are the resources for HTA team operations at the hospital?	2 main informants stated that the source of financing from the HTA team was obtained from the hospital budget without involving external parties from the hospital	Funding is done through the full hospital budget that was submitted during the making of the hospital work program.

From in-depth interviews with informants, it was found that the board of directors had determined the flow of the study carried out by the HTA team at Hospital X as follows, the directors received a request for the adoption of new health technology in the hospital (the HTA topic was submitted by KSM, health workers, or from the unit/installation), the board of directors assigned the HTA team to make a study in accordance with the proposed topic, the HTA team submitted the filing of the submission files to the topic proposer accompanied by supporting data, after the complete file (stated by the HTA team secretary) was reviewed by the HTA team, the assessment was carried out by involving PTK technical team (ad hoc committee) in accordance with the proposed health technology (eg medicine: involving pharmacy, DPJP in that field). The assessment is carried out with the principle of independence. Decision making by the HTA team and making recommendations on the results of the study (appraisal). Submission of decision results to the board of directors, monitoring and evaluation (Lankey and Mcmichael 1999).

In general, the HB-HTA process at hospital X has covered almost all the domains of the HTA core model© as suggested by EUnetHTA as the minimum standard for HTA studies. The existence of limited resources increases the need for a health technology priority scale to be assessed (Narongchai, Ayuwat, and Chinnasri 2016). For HB-HTA, a screening guide (checklist) with certain criteria is available. However, in practice prioritization is an ad-hoc activity. In some hospitals, topic choices are prioritized according to urgency, potential budgetary impact, uncertainty of expected health benefits, concerns about the level of evidence of health benefits, and the presence of significant legal or ethical concerns. Partial or total elimination of resources allocated to technologies with limited therapeutic benefit prevents inefficiencies and allows for reinvestment in other, more useful healthcare technologies. Disinvestment activities in hospitals are usually carried out due to budget cuts (Jahnkassim and Ip 2006).



Conclusion and Recommendation

Hospital-based Health Technology Assessment (Hospital-based HTA) evolved to address the needs of hospitals in decision-making without ignoring the hospital context, resulting in evidence-based policies. Hospital based HTA is also a guideline for decision making in the selection of health technology in Indonesia according to existing regulations, although technical regulations up to the hospital level are not yet complete. This is also in accordance with the approach taken by Clinical Engineering in hospital medical equipment management, for the acquisition of medical equipment selection one of the inputs for decision making is the HTA committee. Clinical Engineer plays a role in the hospital's multidisciplinary HTA team, be it the Internal Committee model or HTA unit to provide information from the technical side and related aspects to the selection and acquisition of new medical equipment technology. It is hoped that in the development of Hospital Based HTA in Indonesia, Clinical Engineers in Indonesia will have a better role in accordance with their competencies so that regulatory support from the government is needed.

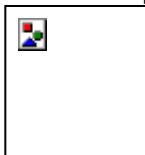
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