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Evaluating Opportunities to Implement Hospital-Based Health Technology Assessment (HB-HTA) in Selected Hospitals in the Kraków Municipality

Abstract

Objectives: Hospitals are the entry point for newly implemented innovative health technologies. Hospital-based health technology assessment (HB-HTA) has been developed to facilitate the use of new health technologies in hospitals. The purpose of this study was to evaluate opportunities to implement HB-HTA in selected hospitals located in the Kraków municipality in Poland.

Research Design & Method: We used shortened version of a questionnaire from a project called "Implementation of the Hospital-Based HTA (HB-HTA) – Hospital Assessment of Innovative Medical Technologies". The participants were hospital managers working in three hospitals located in Kraków: the Ujastek Medical Centre Limited Liability Company (LLC), the Brothers Hospitallers of Saint John of God Hospital LLC, and the University Hospital in Kraków. The survey was conducted and made available online.

Findings: Each of the participating hospitals had implemented new medical technologies. Applications for the implementation of innovative medical technology had been considered by the hospital directors; however, departmental heads were required to act as the lead applicants. Two out of these three hospitals had developed both an application template for the implementation of innovative technologies and a formalized path for their examination. The main source of financing new technologies is the hospitals' funds. Before implementing the technology, hospitals had consulted the following agencies: the National Health Fund, the Ministry of Health, medical technology manufacturers or producer organisations, medical voivodeship consultants, and other hospitals. The financial consequences of the medical technologies implementation were analyzed.

Implications / Recommendations: The hospitals define innovative medical technologies in a correct way. There are no separate HTA units in any of the hospitals. The surveyed hospitals have the capability to implement HB-HTA.

Contribution / Value Added: The implementation of HB-HTA processes in the analysed hospitals may require the hospital managers to broaden knowledge about this area. The implementation of HB-HTA procedures in hospitals may have positive economic effects on the entire health care system.

Keywords: HB-HTA, hospitals, Kraków, budget, innovative medical technologies

Article classification: pilot study

JEL classification: D25, H41, O22, R1

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Introduction

According to the European Network of Health Technology Assessment (EUNetHTA), HTA is a multidisciplinary process that summarises all information on the consequences of using a given health technology in a systematic, transparent, and impartial manner (Sampietro-Colom et al., 2016).

The first aim of HTA is to ease decision-making in the field of proper health technology reimbursement, and it is based on robust scientific research and economic analysis under the conditions of a given health care system. HTA helps to answer specific questions related to the likely value of health technologies (Sampietro-Colom et al., 2016). Furthermore, it helps to optimise the use of available resources for health care in order to obtain health outcomes of the greatest value. Owing to the work of HTA experts, funds for medical technologies could be allocated effectively. Independent evaluation makes it possible to minimise the misuse of public funds in health care (Halmesmäki, Pasternack, & Roine, 2016).

Nowadays, HTA is widely used to make and support coverage decisions in many countries around the world. Most member states of the European Union have national HTA agencies and they operate on the basis of their own HTA analytical and decision-making frameworks (created independently). The main goal of these agencies is to shape an evidence-based reimbursement policy and assist stakeholders in the health care system (Cicchetti et al., 2008).

Literature review

Following the example of other European countries, Poland introduced the HTA process to support reimbursement decision-making processes in 2005, mainly for pharmaceuticals. Initially, the Agency for Health Technology Assessment and Tariff System (*AOTMiT*) was established as nationwide HTA, with responsibility for creating HTA guidelines. The AOTMiT is an opinion-giving and advisory body working on behalf of the Minister of Health and as such is responsible mainly for the evaluation of pharmaceutical technologies whose manufacturers are applying for reimbursement (Lach et al., 2017). The agency's most important tasks include: the preparation of reports on the evaluation of health care services; the preparation of verification analyses for the evaluation of pharmaceuticals, foodstuffs for particular nutritional uses, and medical devices; and issuing opinions on draft health programmes for ministers and local government units (Sowada et al., 2019).

HTA is not always related to drug technology and operation within national HTA agencies; it is also conducted at the hospital level. Hospitals are usually the entry point for new technologies. They can replace or complement the existing technology, which is why policymakers need to know their value in relation to the current standard used in the hospital. Hospital-Based Health Technology Assessment (HB-HTA) aims to facilitate managers' decision-making regarding the introduction of new medical technologies in hospitals (Grenon, Pinget, & Wasserfallen, 2016). HB-HTA covers the processes and methods used to create HTA reports in and for hospitals.

HTA activities at the hospital level provide answers to managers' questions regarding the effects of implementing new technologies after taking into account the specific organisation of work in the hospital. Thus, the HTA process must be adapted to hospital conditions and take into consideration the hospital's limited resources. HB-HTA measures and evaluates the impact of an individual's performance on clients (patients), the hospital, and the society as a whole (Sampietro-Colom et al., 2015).

The following categories of the units of HB-HTA are distinguished:

1. Independent groups. This is the first stage of an individual's development within HB-HTA. They operate informally in a hospital to provide support during decision-making.
2. Integrated HB-HTA (integrated units). These are small units comprising a limited number

of employees. These units are embedded in a system of institutional cooperation that includes universities and research centres. Thus, they engage a network of experts in various fields to support their actions.

3. Standalone HB-HTA units. These units operate mainly inside hospitals, which is why any influence from national or regional HTA organisations is limited. These are more established HB-HTA units, operating on the basis of formalised and standardised procedures.
4. Integrated specialised HB-HTA (integrated specialised units). These units are integrated with the regional or national HTA. Their activities must be formally subject to cooperation with a national or regional HTA agency, but may retain a certain level of autonomy. They are characterised by a high level of formalisation, also in terms of the division of employee duties (Kowalska-Bobko et al., 2020).

Each country has its own specifity in how medical technology is organised; therefore, a variety of solutions in this area are being implemented around the world. Countries differ with regard to the type of HB-HTA units, the level of formalisation, the features of activities, and the type of employed professionals. Differences are also significant in funding sources and healthcare actors involved in shaping HB-HTA.

In Europe, Spain is considered as the country with the most developed system of Hospital-Based Health Technology Assessment. HTA is well-known by Spanish doctors and managers due to the long tradition of Spanish national/regional HTA agencies. For several years, Spanish regions have been justifying investment decisions as being in line with HB-HTA methodology. However, rather than being an obligatory action for all regions, it is about good management practice implementation. The current role of HB-HTA units in the health technology management in Spanish hospitals is organised in a different way and depends on the advancement on the hospital health technology assessment system in a given facility or region (Sampietro-Colom et al., 2017; Bernal et al., 2018).

In Finland, there are no regulations binding hospitals to incorporate HB-HTA guidelines; therefore, using HB-HTA methodology is voluntary. Among institutions promoting good practices with regard to HB-HTA one can highlight the HTA National Agency, the FinoHTA, and the authorities of fifteen hospital districts. The National Agency is responsible for coordinating tasks, collecting databases, and developing methodology. Districts define the area of assessment, formulate the assessment, and watch over the process of technology implementation. Although the majority of Finnish hospitals are familiar with HB-HTA, not all of them apply these principles. Currently, there is a need to implement the mini-HTA approach, especially in university hospitals. This will help to standardise the criteria for implementing new medical technologies and enable cooperation between those hospitals which decide to adopt such criteria. In order to disseminate HB-HTA on a larger scale, it is necessary to adjust the methods of health technology assessment to the needs of a given hospital environment, as well as to establish cooperation with clinicians from various fields of medicine (Roine & Pasternack, 2017; Halmesmäki, Pasternack, & Roine, 2016).

In the literature, there is no detailed information about Austrian HB-HTA units. Therefore, it is difficult to estimate the impact of the functioning of these units on the Austrian health care system. Available resources indicate that reports on new technologies have had a positive impact on hospital managers' decisions to invest in these technologies. Austrian HB-HTA practices were incorporated locally, i.e. at the hospital level. The results of the HB-HTA reports helped in making decisions regarding the implementation of a given medical technology. It should be noted that HTA made it possible to limit the implementation of technnologies without evidence-based medicine support, and it reduced expenditures on ineffective medical technologies (Sampietro-Colom et al., 2015).

Materials and methods

Hospitals are the entry point for new medical technologies. It is, therefore, important that the technology assessment process is embedded in a hospital setting and takes its specific features into account. Currently, no hospital in Poland has an HB-HTA official unit. The aim of the current study was to analyse the processes of implementing new medical technologies in three hospitals located in the Kraków municipality: the Ujastek Medical Centre LLC; the Brothers Hospitallers of Saint John of God Hospital LLC; the University Hospital in Kraków.

The research tool was a shortened version of the questionnaire used in the project "Implementation of the Hospital-Based HTA (HB-HTA) – Hospital Assessment of Innovative Medical Technologies", co-financed by the National Centre for Research and Development. This was under the Strategic Programme of Scientific Research and Development, known as the 'Social and economic development of Poland in the conditions of globalising markets', or 'GOSPOSTRATEG' (Narodowe Centrum Badań i Rozwoju, 2017). The project manager approved the use of this research tool. The questionnaire consisted of 2 open-ended questions and 14 closed questions. For the purposes of the research, medical technologies were divided into three groups: diagnostic procedures, therapeutic procedures, and organisational systems supporting the provision of services. The aim of the survey was to obtain knowledge about hospitals' methods and criteria for implementing innovative medical technologies.

Four hospitals located in the commune of Kraków were invited to take part in the pilot study. Consent to participate in the study was expressed by three medical entities: the Ujastek Medical Centre limit LLC – a hospital with the gynecology and obstetrics profile, located at 3 Ujastek Street in Kraków; the Brothers Hospitallers of Saint John of God Hospital LLC; and the University Hospital in Kraków, which is an Independent Public Health Care Entity. Hospitals were selected so that they differed both in the legal form (an independent public health care institution versus commercial companies) and in the founding authority/owner. The differences between hospitals also concerned the number of departments (one hospital with a large number of departments and two small ones were selected) and the degree of reference. These differences could have had a significant impact on the activities of HB-HTA in the hospitals.

After consent had been obtained, questionnaires were sent to representatives of each institution. The surveys were made available online due to the epidemiological situation in the country and in the world (the threat of COVID-19).

Table 1 presents basic information about the selected hospitals.

Table 1. Characteristics of the studied group of hospitals

	Ujastek Medical Center LLC	**Brothers Hospitallers of Saint John of God Hospital LLC**	**University Hospital in Kraków**
Legal form	Commercial company	Commercial company	Independent public health care institution
Ownership / Authority	Neomedic Group	Convent of Bonifrats	Jagiellonian University
Reference degree	III	II	III
Number of wards	2	5	31
Contract with the National Health Fund (NHF)	Yes	Yes	Yes
Paid services	Yes	Yes	Yes

Source: Based on information obtained from the hospitals' official websites.

Results and discussion

All medical entities that participated in the study agreed to collect and process basic information about the hospital, including the unit responsible for implementing innovative medical technologies in the facility.

The first question concerned the definition of implementing innovative medical technologies. All three hospitals considered the definition of implementing innovative medical technologies to involve developing new medical technologies or improving the existing technologies in order to solve a health problem, increase the efficiency of provided services, reach new patient groups, and increase the efficiency of spending public funds. None of the facilities recognised the implementation of innovative medical technologies as the introduction of new medical technologies or fundamentally changed ways of organising services, resulting in better accessibility and quality of health services; nor did they provide their own definition of this process.

The second question asked participants to indicate the definition of innovative medical technology. Two out of the three surveyed units indicated the definition to be: new or significantly improved technology which was used for the first time in a given hospital. One hospital recognised innovative medical technology as a new or significantly improved technology that was first used in the domestic market. No hospital provided its own definition of innovative medical technology.

The third question concerned the areas in which innovative medical technologies are implemented in the hospital. All three hospitals implemented new technologies in the therapeutic area. Two hospitals did not implement technology in other areas. One hospital implemented innovative technologies in all three aforementioned fields (diagnostic procedures, therapeutic procedures, and organisational systems supporting the provision of benefits) (see Table 2).

Questions four and five concerned the identification of those who apply and consider applications for the implementation of innovative medical technologies in the hospital. Each hospital indicated that the person applying for the implementation of new technology was a hospital employee. In two of the medical entities, applications were sent by a head of the department; in the third one, they were sent by a medical worker with the status of a manager or an expert.

Two hospitals reported that applications for the implementation of innovative medical technology are examined by hospital directors. The third hospital has an organisational unit that deals with examining such applications. Members of this unit include directors of the medical department, the department for infrastructure, and the financial department.

In each surveyed facility, the final decision on the implementation or rejection of innovative medical technologies is made by the hospital manager. None of the hospitals has a specially-appointed team to make decisions on the implementation of innovative medical technologies, nor do they use the founding body for this purpose. External institutions themselves (e.g. local governments) are not interested in the descriptions of the innovative

Table 2. Areas where innovative medical technologies are implemented in the surveyed hospitals

Areas of implemented medical technologies	Ujastek Hospital	Brothers Hospitallers of Saint John of God Hospital LLC	University Hospital
Diagnostic procedures	NO	NO	YES
Therapeutic procedures	YES	YES	YES
Organisational systems supporting the provision of benefits	NO	NO	YES

Source: Own elaboration.

technologies introduced by the hospital coming under their areas. All information on this is collected in Table 3.

One hospital had developed both an application template and a formalised application process for the implementation of innovative medical technologies. Thus, this unit had introduced an internal regulation process for the applications for innovative technologies. In the remaining hospitals, the examination of the applications for innovation was not regulated (see Table 4).

Question nine concerned sources of financing innovative medical technologies implemented in the hospital. The following sources were indicated:

- own funds (three hospitals);
- funds obtained under the implementation of European Union / EEA projects (one hospital);
- funds transferred by the local government (one hospital);
- research grants (one hospital).

Additionally, one medical entity indicated the resources of the Ministry of Health (health programmes) and the National Health Fund (pharmaceutical programmes) as a source of financing (see Table 5).

Another question related to the hospitals' consultation with other entities of the health care system during the process of assessing the potential benefits of innovative medical technologies. Hospitals reported consultations with: the National Health Fund, the Ministry of Health, manufacturers of medical technologies (e.g. medical equipment, pharmaceuticals) or producer organisations, provincial consultants, and other hospitals. In addition, one hospital reported consultations with other entities when the need arises, but these entities were not specified. One hospital held no consultations during the assessment of innovative medical technologies (see Table 6).

Table 3. Information about those responsible for the implementation of innovative medical technology in the surveyed hospitals

People responsible for:	Ujastek Hospital	Brothers Hospitallers of Saint John of God Hospital LLC	University Hospital
Applying for technology implementation	Head of the ward	Head of the ward	A medical employee with the status of a manager or an expert
Examining the application	Hospital manager	Hospital manager	A special organisational unit
Making a decision to implement/ reject a technology	Director of the hospital	Director of the hospital	Director of the hospital

Source: Own elaboration.

Table 4. Information about the process of implementing innovative medical technologies in the surveyed units

Information about the technology implementation process	Ujastek Hospital	Brothers Hospitallers of Saint John of God Hospital LLC	University Hospital
Model application for the implementation of innovation	NO	NO	YES
Formalised path for processing application	NO	NO	YES

Source: Own elaboration.

Table 5. Sources of financing innovative medical technologies implemented in the surveyed hospitals

Sources of financing for new technologies	Ujastek Hospital	Brothers Hospitallers of Saint John of God Hospital LLC	University Hospital
Own funds	YES	YES	YES
Funds obtained as part of the implementation of European Union / EEA projects	NO	NO	YES
Funds transferred by the local government	NO	NO	YES
Research grants	NO	NO	YES
Other (additional) sources	NO	NO	the Ministry of Health and the NHF funds

Source: Own elaboration.

Table 6. Health care system entities consulted by the hospitals during the assessment of innovative medical technologies

Health care system entities	Ujastek Hospital	Brothers Hospitallers of Saint John of God Hospital LLC	University Hospital
the AOTMiT (HTA Agency)	NO	NO	NO
the NHF	NO	NO	YES
the Ministry of Health	NO	NO	YES
the Medical Research Agency	NO	NO	NO
Patient's associations and organisations	NO	NO	NO
Medical technology manufacturers or producer organisations	NO	NO	YES
Scientific societies	NO	NO	NO
Medical chambers	NO	NO	NO
Provincial consultants	YES	NO	NO
National medical consultants	NO	NO	NO
Other hospitals	YES	NO	NO

Source: Own elaboration.

All three surveyed hospitals analyse the financial impact of their implementation when assessing innovative medical technologies. Only one hospital investigates whether the innovation has been implemented in other hospitals in Poland, and another investigates its use in other countries. Two hospitals analyse the financing method of implemented innovation. All the analysed information is summed up in Table 7.

One hospital prepares a report on the assessment of implemented innovative medical technologies. Two of the hospitals evaluate the effects of their implementation once it has been carried out (see Table 8).

The effective use of limited resources in the health care system is crucial for the proper functioning of the entire system. Policymakers often ask themselves how to reduce these already scarce resources without losing the quality of the provided services. One method that can help reduce financial resources is HTA performed at the hospital level. It is worth emphasising once again that

Table 7. Information analysed during the assessment of innovative medical technologies

Analysed information	Ujastek Hospital	Brothers Hospitallers of Saint John of God Hospital LLC	University Hospital
Implementation of innovations in other hospitals in Poland	NO	YES	NO
Implementation of innovations in other countries	YES	NO	NO
The financial effect of the implemented innovation	YES	YES	YES
The method of financing the implemented innovation	YES	NO	YES

Source: Own elaboration.

Table 8. Report on the assessment of the implemented innovative medical technologies and the evaluation of the effects of their implementation in the surveyed hospitals

Is the hospital developing…	Ujastek Hospital	Brothers Hospitallers of Saint John of God Hospital LLC	University Hospital
an assessment report?	NO	YES	NO
the evaluation of the effects of the implementation?	YES	YES	NO

Source: Own elaboration.

hospitals are the entry point for new medical technologies. Therefore, HTA analyses should be tailored to specific hospital conditions. HB-HTA helps managers make the right decision about implementing the most effective and profitable innovative medical technologies (Martelli et al., 2016). International reports of HB-HTA indicate the improvement of the implementation of new technologies in hospitals as well as the reduction of the costs associated with this investment (Granados et al., 2000).

As already mentioned, there are currently no hospital units for HTA in Poland, but in the era of rapid technological progress, especially in the field of medicine, hospitals are increasingly implementing new medical technologies. Therefore, they have already developed certain criteria that they use when making decisions about implementing innovations. These criteria are usually not systematised in any way and are mainly based on the experience, skills, and intuition of hospital management. The hospitals surveyed in the pilot study also did not mention the creation of a separate unit responsible for HTA processes.

A study in Spain found the following obstacles for the establishment of HB-HTA: a wrong hospital strategy for the exploitation of assessment results; the lack of departments dedicated to the assessment, supervision, and quality control of Health Technology Assessment reports; technologies are not reassessed after licensing; the recovery of technology costs is not possible; resistance of hospital specialists to change and the need to raise their technical knowledge on HTA; inaccessibility of scientific resources; and physical and spatial constraints. The Spanish study's recommendation towards reducing the aforementioned problems involved: establishing an association for monitoring the HTA process; training personnel; making the use of technology assessments mandatory by putting down clear rules to help the decision-making process; and putting down rules which require the existence of assessment reports for every health technology which seeks a licence

to enter the hospitals (Mohtasham, Majdzadeh, & Jamshidi, 2017).

In the HB-HTA process, it is important to create final reports on the assessment of implemented innovative medical technologies. Reports of this type were prepared by one the analysed hospitals. However, after the implementation of innovative medical technologies, the evaluation of the effects of their implementation was carried out in two of the surveyed hospitals.

The surveyed hospitals show great potential – be it larger or smaller – for the implementation of formal HB-HTA processes. Some elements of the HTA process had already been formalised and structured therein. However, there are many elements that need to be refined and applied whenever an innovative medical technology is considered in a hospital. It is important for hospitals to recognize both the need for and the benefits of structured assessment processes.

Two currently implemented initiatives can certainly contribute to this: firstly, the aforementioned research and implementation project of the Hospital Assessment of Innovative Medical Technologies in Poland (HB-HTA-PL), financed by the National Centre for Research and Development (NCBiR) under the GOSPOSTRATEG path (Kowalska-Bobko et al., 2020).

Secondly, the Operational Programme Knowledge, Education, and Development (POWER) 2014–2020, action 5.2 advocates pro-quality actions and organisational solutions in the health care system facilitating access to inexpensive, sustainable, and high-quality health services (Ministerstwo Zdrowia, 2018). As part of the POWER Programme, the following project is carried out: "Effective medical facility. Training programme for administrative and management employees to improve quality in health care". The aim of this project is to improve the competencies of 130 administrative and management employees of medical entities, payer representatives (NFZ), and medical staff, as well as representatives of founding bodies of medical entities in the context of the proper functioning of the health care system in the field of HB-HTA. These tasks will be carried out as part of full-time and postgraduate studies conducted by the Institute of Public Health of the Collegium Medicum of the Jagiellonian University. The implementation of the project will supplement the medical education of management staff and the experience acquired through seniority, which will improve the quality and effectiveness of services provided by medical entities. Such programmes should contribute to human resource development in shaping HB-HTA in healthcare facilities, as well as they should result in understanding hospital health technology as a tool to improve management techniques made by managers and stakeholders.

Among European HB-HTA projects, the most important one was the AdHopHTA project (Adopting Hospital-Based Health Technology Assessment), which collected information on hospital units in selected European countries (Austria, Denmark, Estonia, Finland, France Italy, Norway, Spain, Sweden, Switzerland, Turkey). The knowledge gained under the project was aimed at disseminating the values of economic and organisational analyses. The educational value was significant to these activities, as it was about indicating the benefits of implementing hospital health technology assessment. The task of that work was also to create the HB-HTA environment at the appropriate level (Sampietro-Colom et al., 2015).

Concluding remarks

The results of the conducted study allows for the following conclusions. Firstly, hospitals that participated in the pilot study defined innovative medical technologies and the process of their implementation in a correct way. New technologies were implemented in each of the analysed hospitals. In all three hospitals, technologies were implemented in the therapeutic area, and in one hospital also in the area of diagnostic procedures and organisational systems supporting the provision of health services. The person applying for the implementation of the new technology was the head of the department, a medical worker with

the status of a manager, or an expert. Applications for the implementation of innovative medical technology were considered by hospital directors or, in the case of one hospital, by an organisational unit that dealt with such applications. In one hospital (the University Hospital in Kraków), a template of an application for the implementation of innovative medical technologies was developed and an internal regulation for processing the applications was introduced. The examined hospitals did not have separate units or teams responsible for conducting HTA. It is possible to implement formalised HB-HTA processes in the analysed hospitals, but it will require broadening the knowledge of hospital managers in this area.

One limitations of the study is a small group of the respondents and the online form of the study. In-depth interviews with hospital managers instead of online surveys could add value to the research. Further, the drawn conclusions concerned three hospitals located nearby one another. This may not allow for accuracy when assessing the implementation of HB-HTA nationwide. An increase in the number of institutions participating in the study should be taken into account. It would be useful to broaden the study group to a dozen facilities from different regions and cities. The research should really be based on statistical features, as making conclusions based on statistical methods would have been more beneficial, because more information would have been revealed. However, using statistical methods was impossible at this time due to the small number of the respondents, hence the qualitative and descriptive character of the study. We therefore prescribe an attitude to health technologies evaluation which does not involve qualitative analyses of the current approach to innovations assessment. As researchers, we agree that a further study with more methodological tools will provide more information with concrete guidelines for health care actors and hospital managers.

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Appendix

Survey title:
The Implementation of Medical Technologies in Selected Areas in the Commune of Kraków

GENERAL INFORMATION

1. The questionnaire was prepared on the basis of the project "Implementation of the Hospital-Based HTA (HB-HTA) – Hospital Assessment of Innovative Medical Technologies", co-financed by the National Centre for Research and Development under the Strategic Programme of Scientific Research and Development "Social and economic development of Poland in the conditions of globalising markets" (GOSPOSTRATEG).
2. The survey is dedicated to hospitals operating in the area of the Kraków municipality. The hospitals were selected so that they differ in their legal form (independent / public health care institution / commercial companies) and the creating authority/owner.
3. The aim of the survey is to obtain knowledge about the methods and criteria for implementing innovative medical technologies by hospitals.

INSTRUCTION

1. Due to the content of the survey questions, please fill in the questionnaire with the director of the hospital or a person authorised by them.
2. The survey consists of single-choice or multiple-choice questions and open-ended questions. For each question, the method of answering was indicated (*one answer to choose / one or more answers to choose from / open-ended question*).
3. The questions concern events related only to the implementation of innovative medical technologies in the last five years, i.e. from 2014 until the questionnaire was completed.
4. The survey concerns only innovations related to the provision of health care services. In the case of the purchase of medical equipment, the innovation IS NOT the purchase of equipment with similar or similar parameters (e.g. a purchase made due to the need to replace used equipment).
5. It takes about 10 minutes to complete the survey.
6. The survey consists of 16 questions.

DATA PROCESSING AGREEMENT

A lack of consent to data processing makes it impossible to complete the survey.

Acting pursuant to Art. 6 sec. 1 lit. a Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April, 2016, on the protection of individuals with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46 / EC (General Data Protection Regulation) (Journal of Laws UE. L 2016 No. 119, p. 1) in connection with Art. 12 sec. 1 of the Act of February 21, 2019, amending the Act on health care benefits financed from public funds and certain other acts (Journal of Laws of 2019, item 399), I consent to the collection and processing of the following data for the purposes of the research:

- basic information about the hospital;
- data on the unit responsible for implementing innovative medical technologies in the hospital.

[one answer to choose]

- Yes, I consent to the collection and processing of the above-mentioned data;
- I do not consent to the collection and processing of the above-mentioned data and I refuse to participate in the study.

BASIC INFORMATION ABOUT THE SURVEY

> Pursuant to the Act of 27 August, 2004, on health care services financed from public funds (i.e. Journal of Laws of 2018, item 1510 as amended), medical technology includes: drugs, devices, diagnostic and therapeutic procedures used in specific indications, as well as organisational support systems within which health services are performed.

According to the definition of the Oslo Manual 2018, an innovation is: a new or improved product or process (or a combination thereof) that differs significantly from the previous products or processes of the unit – the hospital – and which has been made available to potential users (product) or put into use by the unit (process).

For the purposes of the survey, medical technologies were divided into three groups: diagnostic procedures, therapeutic procedures, and organisational systems supporting the provision of services.

I. SURVEY QUESTION

Hospital name: …….....

1. According to you, the implementation of innovative medical technology can be defined as:
[one answer to choose]
- the introduction of new medical technologies or fundamentally changed methods of providing services, resulting in better availability and quality of health services
- developing new medical technologies or improving the existing technologies in order to solve a health problem, increase the efficiency of provided services, reach new groups of patients, increase the efficiency of spending public funds
- other – please provide your own definition of innovation ……

2. According to you, innovative medical technology is:
[one or more answers to choose]
- new or significantly improved technology that was used for the first time in a given hospital
- new or significantly improved technology that was used for the first time on the domestic market
- new or significantly improved technology that was used for the first time on a foreign market
- other:…… ……..

II. INNOVATIONS IN THE AREA OF DIAGNOSTIC PROCEDURES, THERAPEUTIC PROCEDURES AND ORGANISATIONAL SYSTEMS SUPPORTING SERVICES

The questions in this part of the survey concern the implementation of new or substantially changed (improved) medical technologies in the area of diagnostic procedures, therapeutic procedures, and organisational systems supporting the provision of services.

3. In which of the areas are innovative medical technologies implemented in the hospital?
[one or more answers to choose]
- in the area of diagnostic procedures
- in the area of therapeutic procedures
- in the area of organisational systems supporting the provision of benefits
- innovative medical technologies are not implemented in the hospital

(NOTE: If you chose the LAST answer, please go to question no. 15)

4. Who is applying for the implementation of innovative medical technologies?
[one or more answers to choose]
- a hospital employee (please indicate the official position) …….....
- the founding body
- an external company
- other (please specify): …….....

5. Who considers applications for the implementation of innovative medical technologies?
[one or more answers to choose]
- an organisational unit that examines applications for the implementation of innovations
- various organisational units (please list which): ……
- the director of the hospital
- other (please specify): ……

6. Who ultimately makes the decision to implement or reject innovative medical technologies?
[one or more answers to choose]
- the director of the hospital
- a team set up for this purpose specifically
- the founding body
- other (please specify): .....……

7. Has a template application for implementation of innovative medical technologies been developed in the hospital?
[one answer to choose]
- Yes.
- No.

8. Has the hospital developed a formal path for examining an application for the implementation of innovative medical technologies?
[one answer to choose]
- Yes – an internal regulation has been introduced, pursuant to which the application for the implementation of innovation is processed.
- No – examination of the application for innovation has not been regulated.

9. What are the sources of financing innovative medical technologies?
[one or more answers to choose]
- the hospital's own funds
- funds obtained under the implementation of European Union / EEA projects
- funds transferred by the local government
- research grants
- pother (please specify): ……

10. Please enumerate the innovative medical technologies that have been considered in the hospital over the last five years.
[open answer]
.....
.....

11. When assessing innovative medical technologies, does the hospital consult:
[one or more answers to choose]
- the Agency for Health Technology Assessment and Tariffs
- the National Health Fund
- the Ministry of Health
- the Medical Research Agency
- patient associations and organisations
- manufacturers of medical technologies (e.g. medical equipment, drugs) or producer organisations
- scientific societies
- chambers for associating medical professions
- provincial consultants
- national consultants
- other hospitals
- other:…….....
- Not applicable – the hospital does not conduct consultations.

12. When assessing innovative medical technologies, does the hospital analyse:
[one or more answers to choose]
- whether the innovation was implemented in other hospitals in Poland
- whether the innovation was implemented in other countries
- what the financial effect of implementing the innovation will be
- what the method of financing the implemented innovation will be
- other: …….....

13. Is there a report on the evaluation of implemented innovative medical technologies?
[one answer to choose]
- Yes.
- No.

14. After the implementation of innovative medical technologies, is there an evaluation of the effects of the implementation?
[one answer to choose]
- Yes.
- No.

15. Why is the hospital not implementing innovative medical technologies?
[one or more answers to choose]
- no need to implement innovation
- the lack of financial resources
- the lack of human resources
- the lack of knowledge about how to implement innovations
- the lack of knowledge about innovations that can be implemented
- the existence of legislative barriers
- other (please specify): ……

16. Comments to the survey:
[open question]
…….

Thank you for your participation in the survey.