

A PROCESS OF PRIORITIZING TOPICS FOR HEALTH TECHNOLOGY ASSESSMENT IN KAZAKHSTAN

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Objectives: The aim of this study was to develop criteria for the prioritization of topics for health technology assessment (HTA) in the healthcare system of Kazakhstan.

Methods: Initial proposals for criteria were suggested through consultation with Ministry of Health (MoH) policy areas. These were refined through a workshop attended by HTA department staff, persons from medical universities and research institutes, and MoH policy makers. The workshop included discussion on methods used in international HTA practice. Opinions of participants on selection of criteria from those specified in a review of prioritization processes were used to define a list for inclusion in an instrument for routine use. A scoring system was established in later discussion.

Results: Selected criteria for HTA prioritization were burden of disease, availability of alternative technology, clinical effectiveness, economic efficiency, budget impact, and ethical, legal, and/or psychosocial aspects. For each criterion, a health technology under consideration is given a score from 3 (High) to 1 (Low). The total score determines whether the technology is of high to medium priority or of low priority. Determination of priorities for assessment, using the instrument, should be carried out by an expert group appointed by the MoH. The process was applied in 2014 to a selection of topics, and three health technologies were chosen for full assessments.

Conclusions: Criteria for prioritization have evolved with development of the HTA program in Kazakhstan. A method for HTA prioritization has been developed that is easy to apply, requires comparatively few resources, and is compatible with processes required by the MoH.

Keywords: health technology assessment, Prioritization of topics, Kazakhstan

In the Republic of Kazakhstan (RK), the effective and appropriate use of healthcare resources to ensure the availability and quality of medical care is of paramount importance in the health sector. Active support from the government in early 2005, which increased funding for health care, gave opportunity for many hospitals in the Republic to introduce various technologies. Currently a large number of health technologies in Kazakhstan have been adopted without assessment, although the importance of ensuring the effectiveness and efficiency of technology, and the quality of services, is well understood.

In accordance with the State Program of Healthcare Reform and Development of the Republic of Kazakhstan for 2005–10, and with the support of the World Bank, the “Kazakhstan health sector Technology transfer and institutional reform project” was created. As part of this, the Center for

Standardization (CS) was established, with implementation of health technology assessment (HTA) as one of its functions (1,2). Use of HTA would lead to better clinical and policy decision making. In this article, we present the process and the criteria for prioritization of HTA topics in the RK for timely identification of technologies that need to be evaluated.

Within the project, the HTA department within CS had collaborated since 2010 with the Canadian Society for International Health (CSIH), which provided documents and training sessions on HTA (3). In 2012, the Ministry of Health (MoH) commissioned the HTA department, with the support of CSIH, to prepare the first five HTA reports (3). The technologies to be considered in the reports were identified by the MoH and reflected current issues of importance to RK health care.

The purpose of HTA is systematic review of short-term and long-term effects of health technologies in terms of rational use of healthcare resources and serves as a tool for policy decisions. The coordination of HTA work is subject to acceptance and implementation of prioritization processes (4). HTA helps policy

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makers, managers, clinicians, and others stakeholders choose health technologies that are effective and can provide value for money (5–7).

A procedure for prioritizing HTA topics in the context of the RK health system must take account of the MoH requirement for identification and selection of topics on a yearly basis. Interested parties such as Scientific Centers (SC) and MoH policy areas forward suggestions on technologies for assessment to the HTA department during the first half of the year. During the following 3 months the department prepares a package of documents, which includes details of systematic reviews and other information about the effectiveness of the suggested technologies. These documents are sent to the Expert Commission of the MoH.

Meetings of the Expert Commission are then held to identify which topics will require a full HTA. This process is conducted within 2 months (October and November), as the commission may request additional information. Thus, the final decision on the definition for the assessment may be approved during the current year.

Timing of these activities presented a challenge for the HTA department. An organization can at any time send a request to the Ministry and the department has then to make some sort of assessment in the short term. In some cases, it is impossible to perform a complete evaluation in accordance with accepted methodology.

REQUIREMENT FOR A PRIORITY SETTING PROCESS

Reflecting the further development of HTA in Kazakhstan (7,8), the HTA department in 2013 conducted initial examination of twenty-nine new technologies, which had been adopted from abroad, considering safety, efficacy, and quality requirements. The Expert Commission of the MoH had proposed all these new technologies for consideration. The HTA department also began the process of technology assessment from the list of highly specialized medical care (HSMC), approved by the MoH in 2012. Staff from the Scientific Research Institute (SRC), SCs, and universities, who were trained on HTA in 2012, were involved in developing the list. Analysis of the HSMC list for the presence of expert assessments, showed that 217 of the 334 technologies had not passed through the HTA process. The analysis covered a part of the health technology evaluation process, in the form of brief summaries. Results from international data were presented, based on evidence-based medicine principles.

In 2013, the following criteria were defined for application of HTA prioritization: (i) expensive technologies; (ii) technology with low or undefined efficiency; (iii) costly technology for use with small numbers of patients; and (iv) technology that was associated with significant ethical issues. These criteria were used in decisions by the MoH to commission assessments of a further three technologies (implantation of an ar-

tificial heart or LVAD, assisted reproductive technologies, and stem cell treatment for degenerative lesions of parenchymal organs).

The amount of work for one department was massive, and there was no consistency. Therefore, the department was asked to structure the work through the development of process and criteria for prioritization of HTA. There was a need both for better ability to inform MoH decisions and to contribute to the effective management of the HTA program. An issue to consider in developing a suitable process is whose priority is to be considered. The HTA program, clients and funders of the program, and the overall health system will each have valid but somewhat differing perspectives.

METHODS

Initial proposals for criteria and approaches were suggested through consultation with relevant MoH policy areas with some input from CSIH. These were refined through a workshop on “Training on HTA priority-setting for MOH decision-making”. CSIH was responsible for the design and delivery of the workshop. The HTA department of CS was responsible for the organization of logistics and the invitation of participants.

Participants in the workshop included thirteen health professionals from SCs and university hospitals, seven current or former members of the HTA department, and four policy makers from the MoH. Most of the health professionals had had some contact with HTA through rapid reviews.

The workshop was based on interactive lectures and group exercises including HTA case studies that the CSIH mentors had prepared for decision-maker clients. Priority setting was addressed through considering approaches used by HTA programs in other countries and the initial experience in the RK. Discussions included methods and criteria used in international practice in prioritization, and on the need to adapt them in the context of the RK.

A systematic review by Noorani et al. (9) of practical approaches to priority setting for HTAs was used to guide discussion on appropriate criteria for use in RK. Participants were asked to each choose five categories of criteria from the eleven identified by Noorani et al. that they thought most important, and then to rank their choices in order of importance for prioritization decisions. Limiting the choices to five of the criteria reflected the intention to develop a short instrument that would be easy to apply during implementation of the prioritization process at the MoH. The responses from participants were totaled and categories ranked to give an indication of those areas considered most important for HTA prioritization, in the context of the RK health system. Following the workshop, the participants' selection of criteria were used as the basis of a list to be applied to future HTA decisions in RK. In discussions after the workshop between HTA department staff and CSIH representatives, a further criterion, covering economic evaluation, was

Table 1. Instrument for Prioritization of HTA Topics in Kazakhstan

Criteria	Technology significance		
	High (3)	Medium (2)	Low (1)
1 Burden of disease			
2 Availability of alternative technologies			
3 Clinical effectiveness and safety			
4 Budget impact in the context of Kazakhstan			
5 Economic efficiency (cost minimization, cost-benefit, cost-effectiveness)			
6 Ethical, legal, and/or psychosocial aspects			
Total			

Note. Classification of a technology from the total score: 10–18, medium or high priority recommended for implementation of HTA by the MoH Expert Committee; 6–9, a low priority for implementation of HTA.

added and a basic scoring system for applying the criteria was developed.

RESULTS

Points from Discussion

Several significant points emerged from the interactions at the workshop and from the earlier discussions. It was accepted that the prioritization process must be consistent with policy developed by the Ministry and support the work of HTA programs. The HTA program should be responsible for defining the criteria for future HTA topics for assessment.

It was appreciated that earlier approaches to prioritization had not included the interests of all stakeholders. At this stage, there was a need for staff of the HTA department, representatives of the MoH, and research centers and institutes to participate in the prioritization process.

Methods for prioritization vary between HTA agencies. This reflects differences in values, reporting structures, health-care priorities, and socio-political contexts. Some HTA programs have rigorous prioritization approaches involving the use of expert committees (10). Points to consider in the adoption of such methods include the cost of funding committees, resources used by the agency in supporting them, and the time taken before each HTA on a selected technology can commence. There are no well-defined prioritization criteria for large nondrug projects (9). For any proposed prioritization process, HTA programs should consider whether it is affordable, if it will provide timely advice, if the process is sustainable, and if it might impede other program activities. Despite the fact that in the world there is no single gold standard for definition of the priority of HTA topics, there is a need to develop a process of prioritization for Kazakhstan in the context of the goals of the

organization to develop a reliable, transparent, consistent, and useful policy.

Criteria for Prioritization

The responses provided by the workshop participants and subsequent discussion by the HTA department indicated that the most important criteria for prioritization decisions were those shown in Table 1, which presents an instrument for prioritization of HTA topics. The instrument gives a framework to judge how significant a technology may be for RK health care when the six criteria are taken into account. In applying these criteria to prioritization of a health technology, each of them would be given a score from 3 (High) to 1 (Low). The sum of the scores would then determine whether the technology was of high or medium priority for implementation of an HTA (score 10 or more) or of low priority (less than 10).

With criterion 1, significance would be high if the prevalence and severity of a condition to be treated are high. For criterion 2, significance would be low if there were other effective technologies for the same purpose in place throughout the health system. A technology might be reasonably cost-effective and of medium significance for criterion 5, but could be of low significance for criterion 4 if it would have unacceptable budget impact on available resources. A technology might be of high significance for criterion 6 if it could replace procedures that present ethical difficulties or are not easily accessed by disadvantaged groups. Identification of priorities should be carried out using a process of consensus among an expert group appointed by the Ministry of Health.

In 2014, as part of measures to create a basis for long-term development of HTA, we started to implement the procedure for prioritizing HTA topics. A request for proposals for technologies that should have full HTAs was placed on the website of the Republican Center for Health Development (RCHD). A

Table 2. Significance Scores for Three Health Technologies

Criteria	Scores for each criterion ^a		
	Cardioverter-defibrillator	Cerebral palsy surgery	Brachytherapy for prostate cancer
1 Burden of disease	3	2	3
2 Availability of alternative technologies	2	2	2
3 Clinical effectiveness and safety	3	3	3
4 Budget impact in the context of Kazakhstan	2	2	2
5 Economic efficiency (cost minimization, cost-benefit, cost-effectiveness)	3	2	2
6 Ethical, legal, and/or psychosocial aspects	2	3	2
Total	15	14	14

^a3, High; 2, Medium.

total of forty-one proposed topics for full HTA were obtained from research centers of Kazakhstan.

At the meeting of the Expert Council of RCHD, three topics for full HTA reports were selected in accordance with the criteria for prioritization. These were: (i) implantation of magnetic resonance tomography-compatible cardioverter-defibrillator with cardiac resynchronization function and remote monitoring (15 points of 18 possible); (ii) comprehensive surgical correction of contractures and deformities of the lower limbs in cerebral palsy (selective tenotomy, myotomy, transposition of the proximal tendon constricted muscles with the Strayer operation) (14 points); and (iii) brachytherapy for prostate cancer in an outpatient setting (14 points). [Table 2](#) shows the individual criteria scores for the three technologies.

Approaches to conduct full HTA reports on the three topics were coordinated with MoH. In the preparation of the reports, we formed working groups for each HTA which identified the research questions. Six meetings of the working groups for each topic were held during preparation of the assessments.

DISCUSSION

An approach has been taken to develop a method for HTA prioritization that is easy to apply, requires comparatively few resources, and is compatible with the processes required by the MoH. During the discussions, everyone understood that HTA is a crucial tool in identifying priority areas of the healthcare system. There are tens of thousands of medical technologies, but despite this, the development of medical science leads to the implement of additional new technologies. In Kazakhstan, as well as around the world, only a portion of medical technologies is assessed and there is a lack of resources for complete coverage. This is a major reason for the necessity to establish priorities for HTA, during which all stakeholders participate.

All HTA agencies face pressures in determining their work programs. The different clients of an HTA program (decision

makers) have competing claims regarding the level of urgency of their requests. HTA programs must set priorities for the assessments that they undertake, as a component of effective management.

Active participation of all stakeholders (managers, doctors, decision makers, etc.) in the process of prioritization facilitates the development and understanding of HTA in Kazakhstan. Criteria developed in collaboration with the workshop participants will allow an open and transparent process to prioritize the HTA topics, timely identification of topics and the selection of technologies for which investment will be appropriate. The process of prioritization for the RK will be reviewed periodically. Matters that may be considered are the levels of support it provides for operation of the HTA program, and for MoH decision makers. Other criteria that should be considered in the future, which were discussed at the workshop, are shown in [Table 3](#). At some stage, the prioritization process may need refinement to further clarify high-ranking health technologies by the level of assessment that they require.

The prioritization process enables systematic consideration of applications for the transfer of technology in healthcare organizations. The experience in the RK of developing such a process may be of interest to other health systems. In those other settings, attention should be paid to informing experts, such as clinicians, of new assessment and administrative processes, and obtaining their advice and acceptance.

CONCLUSION

Criteria for prioritization have evolved with development of the HTA program in RK. The prioritization process will support the requirements of the MoH and other stakeholders in RK health care to carry out the identification of appropriate HTA topics. It will also provide important input to the management and operation of the CS HTA program.

Table 3. Possible Additional Criteria for Future Use in HTA Topic Prioritization

Criteria	Associated issues
Timeliness, the need to produce an HTA quickly for decision makers	Does the technology relate to an area where clinical practice is changing rapidly?
Variation in practice	Is there large variation around the country in use of the technology for given clinical condition(s)?
Amount of evidence available	Are there recent HTA reports, systematic reviews or economic analyses on this topic?
Level of interest	Is there media or patient interest in the technology? Is the HTA important from a health professional perspective?
Controversial nature of the technology	Will an HTA provide information that will help reduce the controversy surrounding the clinical issues?

CONFLICTS OF INTEREST

The authors have no conflicts of interest to report.

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