IMPLEMENTATION OF HEALTH TECHNOLOGY ASSESSMENT WORK IN A HOSPITAL IN KAZAKHSTAN

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Objectives: The aim of this study was to implement health technology assessment (HA) in the First General City Hospital in Astana, Kazakhstan.
Methods: We organized trainings to familiarize hospital staff with the purpose and details of HTA. An HTA committee was established, with representation from hospital physicians and managers, and criteria for prioritization of health technologies determined. Clinical departments of the hospital were asked to prepare applications for new technologies for their services.
Results: The HTA committee reviewed five applications and selected a technology from one of these, on single incision laparoscopic surgery (SILS), for assessment. A short HTA report on SILS was prepared, covering its safety, clinical effectiveness, and cost effectiveness. The report was used to support a request to the Department of Health for additional funding to implement this technology within the hospital. This funding was approved and SILS was established in several hospital departments.
Conclusions: This successful initial experience with HTA has paved the way for its routine use by the hospital for informing decisions on the procurement and use of new health technologies.

Keywords: Hospital-based health technology assessment, Health policy, Kazakhstan

Healthcare reform in Kazakhstan over the past 10 years has led to various changes such as the growth in gross domestic product, the development of a competitive market, and the increasing demand for management in healthcare organizations (1–3). During the development of this competitive area, healthcare managers are increasingly interested in rational investment for expanding the range of medical services, while focusing on the provision of health care. This situation makes it possible to increase the implementation of new technology in hospitals.

In the Republic of Kazakhstan, funding for the implementation of medical technology in a hospital comes from the regional health department or from the hospital's own budget. Each year, the department considers bids from hospital managers for the introduction of new technologies. Hospitals can implement new technologies in coordination within the health department and obtain additional financing.

A benefits package is available to those patients who are sent to hospital after receiving a primary care service. Patients are able to choose a hospital for further treatment. Medical services carried out in hospitals within the benefits package are paid per

case through a Regional Committee which is responsible for payment of medical services.

While HTA has been actively used worldwide for many years (4;5), its development in Kazakhstan started only in early 2010 (6). Introduction of HTA in the country was conducted through the Ministry of Health in conjunction with the Canadian Society for International Health (7). Training was provided for physicians and healthcare leaders on HTA topics and methodology. This training allowed health managers to start using HTA tools.

An early initiative was provided by the HTA department of the Republican Center for Health Development (RCHD), which prepares reports for the Ministry of Health. The RCHD program focuses on technologies for which there is a high need at the national level, and considers proposals from scientific institutions and research centers.

In this article, we describe the experience of implementing hospital-based HTA in the First General City Hospital of Astana. The hospital has 279 physicians. In 2013, a total of 12,852 patients were treated in the therapeutic department and 8,650

1. **Obtain information on models for hospital HTA**

2. **Training and consultation with hospital staff**

3. **Establish an HTA committee**

4. **Determine priority criteria**

5. **Seek applications for new technologies**

6. **Select a technology (sils) for assessment**

7. **Prepare an HTA report**

8. **Accept report findings (supported use of SILS)**

9. **Seek funding from health department, using report**

10. **Funding agreed, proceed to implement SILS in hospital**

Figure 1. Steps in implementing hospital HTA in Astana.

in the surgical department. In November 2013, we began to implement the project "Corporate Development of the First Clinical City Hospital." This involved the development of eight areas of activity in the hospital, including implementation of health technology assessment. The aim was to facilitate decision making on the introduction of innovative technologies for the hospital, which were not included in its list of health services.

METHODS

The overall approach to development of the HTA program is shown in Figure 1. We first studied models of hospital-based HTA that had been used in different countries, obtaining information from various databases including those available through HTAi, PubMed, and INAHTA.

Consultation was held with hospital physicians and administrative staff to provide them with details of the role and scope of HTA. Training workshops were organized for physicians (as the experts who used new technologies in the hospital), hospital economists, and managers to examine organizational aspects of technology implementation.

After completion of initial training we created a hospital HTA Committee, which was comprised of senior doctors, hospital managers, and hospital economists, following a model considered by an HTAi Interest Sub-Group (8). Details of each stage of the HTA process were discussed with the committee.

Prioritization criteria for hospital projects were formulated in discussion with the HTA Committee, having regard to accepted HTA practice (9). The criteria selected were budget impact, clinical effectiveness, safety, and availability of alternative technology.

An application form was developed for submitting proposals on technologies which physicians or other stakeholders wished to include or exclude from hospital services. With members of the hospital's innovative technology department (ITDH*)*, which reports directly to the Chief of Hospital, we asked each clinical department of the hospital to prepare applications.

RESULTS

Within a month, applications had been submitted for fifteen technologies to provide a range of services at the hospital. Information in the applications was analyzed and brief details on the technologies were sent to members of the HTA Committee. Points considered included demands for the technology in the region, what alternative technologies were available, and the resources that would be necessary to implement and operate the technology.

The Committee decided to consider five of the suggested technologies: introduction of *in vitro* fertilization services, endoprosthetics in implantation of UroSling for male urinary incontinence, gel for the prevention of adhesions in gynecological operations, bariatric surgery, and single incision laparoscopic surgery (SILS).

After completion of the prioritization process, the Committee decided to assess SILS, which could meet the needs of different departments that wished to develop laparoscopic surgery. The committee asked ITDH to prepare a short HTA report on SILS, covering its safety, clinical effectiveness, and cost-effectiveness. This was prepared over 4 months by ITDH staff and an HTA consultant, following accepted HTA methodology (10). The HTA report concluded that the literature showed that SILS was a safe and clinically effective procedure in experienced hands. Data on the net present value of the technology and on numbers of surgical procedures at the hospital over the previous 3 years were used for an analysis of investment costs.

After considering the findings of the report, the HTA Committee recommended sending a request to the Department of Health in Astana for additional funding to implement this technology within the hospital. The short HTA report proved to be a valuable document in negotiations with the department. Other information provided covered steps in the choice of the technology, the transparency of the selection process, and the participation of the entire team at the hospital. After a series of discussions, the Department of Health agreed to the introduction of SILS at the hospital and to the provision of additional funds.

DISCUSSION

With the introduction of HTA tools to the hospital, we were at first faced with a barrier from the physicians, who were sometimes not willing to introduce changes in their usual activities. To get them interested in HTA, we provided details about the stages of implementation of new technologies in Kazakhstan and on the experience in other countries. Unlike the program at RCHD, in hospital HTA the focus is on medical technology for which there is high demand at the regional level, with consideration of its efficiency and profitability for the hospital. After the first training course, we provided outreach sessions individually for each clinical department. These included searching the database of evidence-based medicine together with physicians,

so that they understood why and how the evaluation process takes place. Eventually, all employees understood the essence of the HTA work and consented to use of the methodology at the hospital.

The transparency of the technology selection process and evaluation enabled us to provide reliable information on the effectiveness of a new technology and influence its implementation at the hospital. The availability of SILS increased the range of available care, met the needs of the hospital, and contributed to the motivation of hospital physicians. The Department of Health in Astana had a key role in agreeing to additional funding for the technology.

POLICY IMPLICATIONS

This successful initial experience with HTA has paved the way for its routine use by the hospital for informing decisions on the procurement and use of new health technologies. Current challenges are the shortage of human resources in the field of HTA and in economic evaluation, and the lack of clear statistical indicators for predicting the needs of the regional population.

The interaction with the Department of Health established a useful mechanism for future considerations on needs and resources for new health technologies. During the discussions with the department, it was proposed in the future to consider the participation of one of its specialists in the HTA Committee, which may strengthen communication.

CONFLICTS OF INTEREST

The authors have no conflicts of interest to report.

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