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## QUALITY OF HEALTH TECHNOLOGY ASSESSMENT REPORTS IN THE REPUBLIC OF KAZAKHSTAN

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### Abstract

**Introduction.** Health technology assessment (HTA) is carried out to inform decision makers about the effectiveness and the need to cover it within the state budget. As a result, the quality of the prepared HTA reports is an important issue.

The aim of our study is to examine the quality of HTA reports prepared in Kazakhstan.

**Methods.** To study the quality of the HTA reports, we used an international checklist prepared by the International Network of Agencies for Health Technology Assessment. This checklist consists of 14 questions, the answers of which should be reflected in the HTA report. Two independent researchers analyzed reports for the period from 2017 to 2021.

**Results.** It can be seen that the quality of HTA reports was improved over the period given. Reports which prepared from 2017 to 2019, did not fully include information on conflicts of interest, as well as the HTA report preparation process. However, from 2020, more detailed information in the HTA reports included. In addition, HTA reports most often focused on cost-effectiveness issues, while ethical, legal and social aspects were very rarely studied.

**Conclusion.** Our analysis shows a positive trend in improving the quality of HTA reports. In the future the preparation of HTA reports need to take into account information relate to legal issues, as well as organizational, ethical and social aspects.

**Keywords:** quality of HTA report; INAHTA checklist; health technology assessment; health policy

### Аннотация

## ОЦЕНКА КАЧЕСТВА ОТЧЕТОВ ТЕХНОЛОГИЙ ЗДРАВООХРАНЕНИЯ В РЕСПУБЛИКЕ КАЗАХСТАН

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**Введение.** Оценка технологий здравоохранения (ОТЗ) проводится для информирования лиц, принимающих решения, об эффективности и необходимости ее покрытия в рамках государственного бюджета. В результате качество подготовленных отчетов ОТЗ является важным вопросом.

**Целью** нашего исследования является изучение качества отчетов ОТЗ, подготовленных в Казахстане.

**Методы.** С целью изучения качества отчетов ОТЗ, мы использовали международный контрольный лист, подготовленный Международной сетью агентств по оценке технологий здравоохранения. Данный контрольный лист состоит из 14 вопросов, ответы на которые должны быть отражены в отчете ОТЗ. Два независимых исследователя проанализировали отчеты за период с 2017 по 2021 год.

**Результаты.** Можно заметить, что качество отчетов ОТЗ за указанный период улучшилось. Отчеты, которые готовились с 2017 по 2019 год, не полностью включали информацию о конфликтах интересов, а также о процессе подготовки отчета ОТЗ. Однако с 2020 года в отчеты ОТЗ включена более подробная информация. Кроме того, отчеты ОТЗ чаще всего фокусировались на вопросах экономической эффективности, в то время как этические, юридические и социальные аспекты изучались очень редко.

**Выводы.** Наш анализ показывает положительную тенденцию в улучшении качества отчетов ОТЗ. В будущем при подготовке отчетов ОТЗ необходимо учитывать информацию, касающуюся юридических вопросов, а также организационных, этических и социальных аспектов.

**Ключевые слова:** качество отчета ОТЗ; контрольный список INАНТА; оценка технологий здравоохранения; политика в области здравоохранения.

Түйіндеме

## ҚАЗАҚСТАН РЕСПУБЛИКАСЫНДАҒЫ ДЕНСАУЛЫҚ ТЕХНОЛОГИЯЛАРЫН ЕСЕПТЕРІН САПАСЫН БАҒАЛАУ

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**Кіріспе.** Денсаулық сақтау технологияларын бағалау (ДСТБ) шешім қабылдаушыларды мемлекеттік бюджет шеңберінде оны жабудың тиімділігі мен қажеттілігі туралы хабардар ету үшін жүргізіледі. Нәтижесінде, ДСТБ-ның дайындалған есептерінің сапасы маңызды мәселе болып табылады.

**Біздің зерттеуіміздің мақсаты** Қазақстанда дайындалған ДСТБ есептерінің сапасын зерттеу болып табылады.

**Әдістер.** ДСТБ есептерінің сапасын зерттеу үшін біз денсаулық сақтау технологияларын бағалау агенттіктерінің халықаралық желісі дайындаған халықаралық бақылау тізімін қолдандық. Бұл бақылау тізімі 14 сұрақтан тұрады, олардың жауаптары ДСТБ есебінде көрсетілуі керек. Екі тәуелсіз зерттеуші 2017-2021 жылдар аралығындағы есептерді талдады.

**Нәтижелер.** Көрсетілген кезеңдегі есептердің сапасы жақсарғанын байқауға болады. 2017 жылдан 2019 жылға дейін дайындалған есептер мүдделер қақтығысы туралы ақпаратты, сондай-ақ ДСТБ есебін дайындау процесін толық қамтымады. Алайда, 2020 жылдан бастап ДСТБ есептеріне толығырақ ақпарат енгізілді. Сонымен қатар, ДСТБ есептері көбінесе экономикалық тиімділік мәселелеріне назар аударды, ал этикалық, құқықтық және әлеуметтік аспектілер өте сирек зерттелді.

**Қорытындылар.** Біздің талдауымыз ДСТБ есептерінің сапасын жақсартудағы оң үрдісті көрсетеді. Болашақта ДСТБ есептерін дайындау кезінде құқықтық мәселелерге, сондай-ақ ұйымдастырушылық, этикалық және әлеуметтік аспектілерге қатысты ақпаратты ескеру қажет.

**Түйін сөздер:** ДСТБ есебінің сапасы; INАНТА бақылау тізімі; денсаулық сақтау технологияларын бағалау; денсаулық сақтау саясаты.

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### **Introduction**

Health technology assessment includes the study of safety, clinical and cost-effectiveness, as well as ethical, social and organizational aspects of health technology [6,8]. This process involves a multidisciplinary team, where the main goal is to provide decision makers to make a decision based on proven information [5]. Last definition presented by O'Rourke et.al was "HTA is a multidisciplinary process

that uses explicit methods to determine the value of a health technology at different points in its lifecycle. The purpose is to inform decision-making in order to promote an equitable, efficient, and high-quality health system" [12].

In Kazakhstan, the process of preparing HTA reports is regulated by the National Center for Health Development (NCHD) on the basis of an Order of the Minister of Health of the Republic of Kazakhstan dated November 30, 2020 No.

ҚР ДСМ-215/2020 «On Approval of the Rules for the Assessment of Health Technologies and Their Application».

The first HTA reports were prepared jointly with the consultants of the Canadian Society International Health [11] in 2013. Since then, more than 30 health technologies have been reported annually. The main applicants for services are medical organizations and pharmaceutical companies. HTA department of the NCHD is coordinates the process from the accepting an application, submitting reports to the Joint commission on the quality of medical services of the Ministry of Health of the Republic of Kazakhstan.

The importance of the quality of HTA reports is noted by a number of studies, as the results of the reports form a decision on the accessibility of technology to a wide range of society [13,3].

**Aim** of the study: to examine the quality of HTA reports for the period from 2017 to 2021

**Methods:** We analyzed all prepared reports for the period from 2017 to 2021. The reports were available on the website of the NCHD. To evaluate the quality of HTA reports we used checklist for health technology assessment reports prepared by the International Network of Agencies for Health Technology Assessment (INAHTA) [7,1]. The purpose of the checklist is to promote a consistent and transparent approach to HTA, and to improve the usefulness and generalizability of HTA reports. The

checklist consists of 14 questions, providing only brief information on a number of important points, the answers of which should be included in all HTA reports. Two independent researchers analyzed reports. During the analysis, the percentage of answers as included information was calculated for each section of the checklist. Calculation provide with using excel.

### Results

169 HTA reports were prepared from 2017 to 2021. The number of HTA reports was decreased from 42 in 2017 to 18 in 2021 (table 1).

Table 1.

### Number of HTA reports.

Year	2017	2018	2019	2020	2021
Number of reports	42	39	40	30	18

The Preliminary part of HTA reports did not include full information. From 2017 and 2019 it can be seen that from five question four was included information partly, while no information was related to information about conflict of interests. However, in 2020 and 2021 we can see positive dynamics where information for all questions usually included (table 2).

In the second part regarding the research and policy issue and other aspects, it can be seen that most often the information was presented partially in all the years studied (table 2).

Table 2.

### The summary of results.

Preliminary	2017			2018			2019			2020			2021		
	Yes	Partly	No	Yes	Partly	No	Yes	Partly	No	Yes	Partly	No	Yes	Partly	No
1. Appropriate contact details for further information?	0,0%	100,0%	0,0%	5,1%	94,9%	0,0%	0,0%	100,0%	0,0%	0,0%	100,0%	0,0%	0,0%	100,0%	0,0%
2. Authors identified?	0,0%	100,0%	0,0%	5,1%	94,9%	0,0%	0,0%	100,0%	0,0%	100,0%	0,0%	0,0%	100,0%	0,0%	0,0%
3. Statement regarding conflict of interest?	64,3%	0,0%	35,7%	51,3%	0,0%	48,7%	60,0%	0,0%	45,0%	100,0%	0,0%	0,0%	100,0%	0,0%	0,0%
4. Statement on whether report externally reviewed?	0,0%	100,0%	0,0%	0,0%	100,0%	0,0%	0,0%	100,0%	0,0%	0,0%	100,0%	0,0%	0,0%	100,0%	0,0%
5. Short summary in non-technical language?	0,0%	100,0%	0,0%	0,0%	100,0%	0,0%	10,0%	90,0%	0,0%	100,0%	0,0%	0,0%	94,4%	5,6%	0,0%
Why?															
6. Reference to the policy question that is addressed?	0,0%	100,0%	0,0%	0,0%	100,0%	0,0%	0,0%	100,0%	0,0%	10,0%	90,0%	0,0%	100,0%	0,0%	0,0%
7. Reference to the research question(s) that is/are addressed?	0,0%	100,0%	0,0%	0,0%	100,0%	0,0%	0,0%	100,0%	0,0%	20,0%	80,0%	0,0%	100,0%	0,0%	0,0%
8. Scope of the assessment specified?	19,0%	81,0%	0,0%	0,0%	100,0%	0,0%	0,0%	78,6%	21,4%	0,0%	100,0%	0,0%	0,0%	100,0%	0,0%
9. Description of the assessed health technology?	81,0%	0,0%	19,0%	100,0%	0,0%	0,0%	100,0%	0,0%	0,0%	100,0%	0,0%	0,0%	94,4%	5,6%	0,0%

Table 2.

The summary of results (continue).

Context	2017			2018			2019			2020			2021		
	Yes	Partly	No	Yes	Partly	No	Yes	Partly	No	Yes	Partly	No	Yes	Partly	
11.5 (Medico-) legal implications considered?	0,0%	0,0%	100,0%	0,0%	0,0%	100,0%	2,5%	0,0%	97,5%	20,0%	0,0%	80,0%	38,9%	16,7%	44,4%
11.6 Economic analysis provided?	100,0%	0,0%	0,0%	87,2%	0,0%	12,8%	60,0%	0,0%	40,0%	100,0%	0,0%	0,0%	94,4%	0,0%	5,6%
11.7 Ethical implications considered?	11,9%	0,0%	88,1%	61,5%	0,0%	38,5%	35,0%	0,0%	65,0%	93,3%	0,0%	6,7%	0,0%	0,0%	100,0%
11.8 Social implications considered?	11,9%	0,0%	88,1%	61,5%	0,0%	38,5%	35,0%	0,0%	65,0%	93,3%	0,0%	6,7%	0,0%	0,0%	100,0%
11.9 Other perspectives (stakeholders, patients, consumers) considered?	0,0%	0,0%	100,0%	0,0%	0,0%	100,0%	0,0%	0,0%	100,0%	0,0%	0,0%	100,0%	0,0%	0,0%	100,0%
<b>What then?</b>															
12. Findings of the assessment discussed?	0,0%	78,6%	21,4%	0,0%	78,6%	21,4%	12,5%	0,0%	87,5%	100,0%	0,0%	0,0%	94,4%	5,6%	0,0%
13. Conclusions from assessment clearly stated?	100,0%	0,0%	0,0%	100,0%	0,0%	0,0%	87,5%	0,0%	12,5%	100,0%	0,0%	0,0%	100,0%	0,0%	0,0%
14. Suggestions for further action?	4,8%	0,0%	95,2%	0,0%	0,0%	100,0%	2,5%	0,0%	97,5%	0,0%	0,0%	100,0%	0,0%	0,0%	100,0%

The next part concerned the evaluation of the detailed information provided on sources and literature search strategies.

Most often, more detailed information was provided regarding questions on the search strategy, the database where the literature was searched, the range of years, as well as language restrictions, and primary data. Not all reports provided additional technology information for discussion, and there was virtually no list of studies that were not included in the analysis whereas the list of included studies can be identified in the report. In addition, in HTA reports the inclusion and exclusion criteria were not always found, or how data was extracted, and how the quality of included articles was critically evaluated.

When examining the context of the HTA reports, it can be seen that cost-benefit evaluation was a priority. Whereas information about ethical, social, legal consequences was rarely included or absent.

While evaluation results were rarely discussed between 2017 and 2019, in subsequent years it can be seen that this part was included in the HTA reports.

The conclusions of the HTA reports were clearly formulated in all years and in all reports, while proposals or recommendations for further actions were not always included.

**Discussion**

Our analysis showed that over time the quality of HTA reports improved, including more detailed information on conflicts of interest, contact details etc. The HTA is carried out to provide information that will be accepted for the

introduction of this technology into the healthcare system. Therefore, it is important when conducting HTA to clearly articulate the policy and research question in order to summarize data and demonstrate results [9]. Future HTA reports should be improved by adding missing information. In particular, a more detailed policy and research issue by discussing with the applicants of the HTA report and conduct of protocol with the scoping review. The quality of the reports can be directly related to the release of the orders of the Ministry of Health, which specified the structure and requirements for the report, as well as the change of management and the experts of the HTA and other factors.

The HTA report should be conducted by two independent experts [2], and include in the report studies that, in the opinion of two experts, were not relevant. The inclusion of a list of excluded studies will allow future evaluation of which data were excluded and why.

Also one strategy to improve the quality of HTA reports should be to include information on ethical, social, organizational and legal aspects. Pasquale Cacciatore et.al. indicated the importance of Organizational aspects in HTA and suggested a new methodology which include the crucial aspects of organizational evaluation in line with the new areas [4]. Daniel Widrig and Brigitte Tag pointed out the importance of conducting a legal analysis of the HTA reports, as its results are related to the coverage of health technology [14]. In international practice, insufficient inclusion of issues related to ethical aspects in HTA reports is often discussed. For example, a systematic review found

that out of 188 reports with a section on ethics that were produced by seventeen HTA agencies in eleven countries, 136 reports did not conduct an ethical analysis, 31 included general information on ethical issues, 17 conducted a norms-based ethical evaluation. Authors concluded that usually HTA reports include ethical data without any analysis [10].

#### Conclusion

Our analysis shows a positive trend in improving the quality of HTA reports. However, important aspects that should be taken into account when preparing HTA reports should be included, such as the study of legal issues, as well as organizational, ethical and social aspects associated with the introduction of health technology.

**Competing interests:** *The authors declare they have no competing interests*

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