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Commentary

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Scientific Development of HTA—A Proposal by the Health Technology Assessment International Scientific Development and Capacity Building Committee

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Abstract

Objectives. To report from the Scientific Development and Capacity Building Committee of Health Technology Assessment International (HTAi) on activities that are being undertaken within HTAi regarding the promotion of scientific rigor in the field of health technology assessment (HTA).

Methods. Retrieval of definitions of HTA that the SDCB committee considered reflective of the current practice of HTA, followed by a narrative synthesis of the core components of HTA.

Results. Several definitions of HTA have been provided, all sharing the notion that HTA is the *formal*, *systematic*, and *transparent* inquiry into the meaning and value, broadly defined, of health technologies, when used in specific patient populations.Many frameworks and tools have been developed for assessing the quality of specific tasks that may be conducted in the context of HTA. Collating such frameworks and tools is likely to be helpful in developing standards and in providing guidance as to how the scientific quality of HTA may be secured. Two current trends in HTA were noted: a stronger health systems focus, and the need to involve stakeholders throughout the HTA process. A wider systems' perspective requires that plausible alternative scenarios are being developed, and wide consultation of various stakeholders is a prerequisite to the development of such scenarios with data from various sources.

Conclusions. Current trends in HTA will lead to different demands on the HTA expert. The task of this emerging policy professional would be not just to provide technical information for problem-solving, but also to combine it with a new function of facilitating public deliberation and learning.

One of the key strategies of Health Technology Assessment International (HTAi) is "to improve health technology assessment (HTA) capacity around the globe and build up an efficient learning environment with HTAi" (HTAi 2015–2020 Strategic Plan). This involves a.o.: identifying learning needs of HTA doers and users within the HTA community; collaborating with teaching centers and academia, and partner with HTA bodies; and contributing to curriculum development.

Objectives

The Scientific Development and Capacity Building Committee (SDCB) of HTAi is envisaged to play a key role in achieving this objective by streamlining the scientific direction of the Society, providing guidance, and developing the capacity of HTAi. The primary objective of this study is to define formally what is meant by "Scientific Development, reflective to HTAi and the needs of current and potential HTAi membership" (Terms of Reference, January 2018).

Methods

In the remit of the SDCB, scientific development in the field of HTA is taken to be short for "enhancing the scientific rigor of HTAs as they are being performed globally, ensuring that HTAs meet certain minimal standards of validity and relevance." We hold that it is not realistic to attempt to develop such standards without having a clear concept of HTA in view. With this in mind, definitions of HTA were retrieved from the literature that the committee considered reflective of the current practice of HTA (Supplementary Table 1). This was followed by a narrative synthesis of the core components of HTA, the risks to HTA to subsequently inform an understanding of the quality standards pertinent to HTA. This study is the result of several

rounds of discussion within the SDCB. A draft version of the study has also been shared with the HTAi Board of Directors for their reflection and comments.

Results

Several definitions of HTA have been provided (e.g., by HTAi, INAHTA, WHO; Supplementary Table 1). Elements that are shared by most of these definitions are that HTA is the *formal*, *systematic*, and *transparent* inquiry into the meaning and value, broadly defined, of health technologies, when used in specific ways, in specific patient populations, in specific contexts.

It is *formal*, in the sense that it serves to support decision making that is likely to affect a wide group of stakeholders (e.g., patients, healthcare providers, manufacturers, third-party payers, citizens). The decision-making process needs to be accountable to these stakeholders, which has important implications for the way HTA is conducted and organized.

It is *systematic*, in the sense that it aims to identify, retrieve, critically appraise, interpret and synthesize all the available evidence that may be considered relevant when developing an understanding of the value of the technology or technologies under investigation.

It is *transparent*, in the sense that it should be possible for all parties to learn how the HTA was conducted, from problem definition to final conclusions and recommendations, who were involved in the process and in what way, what choices were made, and on what grounds.

Risks Associated with HTA

There are three major, related risks involved in HTA: (i) the risk of bias, (ii) the risk of incompleteness, and (iii) the risk of implementation failure.

By *bias*, we mean that a distorted image of a health technology is produced, of its properties or of its value, because of flaws in the available evidence, or because of flaws in the way the evidence was interpreted or synthesized.

By *incompleteness*, we mean that certain aspects of a health technology have been overlooked, not sufficiently acknowledged, or under-estimated.

By *implementation* failure, we refer to the phenomenon that recommendations resulting from an HTA are not or only partially adopted. Reasons may be related to vested interests, competing views on what constitutes credible and relevant evidence, inability of a system to implement required concomitant changes, etc. (1).

Producers and users of HTA should be aware of those risks as they may emerge at the various stages of HTA (e.g., horizon scanning, scoping, early HTA, regulatory advice, market access, etc.) and develop an understanding of underlying causes, leading to further improvement of the practice of HTA. Many frameworks and tools have been developed for assessing the quality of specific tasks that may be conducted in the context of HTA, such as health-economic modeling (e.g., references 2–8). Collating such frameworks and tools is likely to be helpful in developing standards for HTA and in providing guidance as to how the scientific quality of HTA may be secured. However, in addition, an understanding is necessary on issues such as the role of knowledge in policy making, the relation between empirical analysis and normative inquiry in HTA, etc. (9). Such knowledge should help producers and users of HTA to develop an understanding on issues such as why and how stakeholders can be involved in HTA, and how their involvement can improve translating research into practice and vice-versa (10–15).

A Future Perspective

In a recent study, Wild et al. have argued that (i) a national HTA strategy should be based on a thorough knowledge of the healthcare system in question, and (ii) that the underlying analysis should take the perspectives of all stakeholders into consideration to anticipate resistance early (16). This brings together two important trends in current HTA: a stronger health systems focus, and the need to involve stakeholders throughout the HTA process (17).

In conclusion, given the trends identified, it is increasingly acknowledged that selecting single technologies and assessing them in highly contrived situations without taking into account the demands and constraints of the context in which technologies are being used no longer meets the demands of decision makers and is unhelpful in creating sustainable and equitable healthcare systems (18). A wider systems' perspective requires that plausible alternative scenarios are being developed, differing in terms of how patients' needs develop over time and how various technologies evolve in meeting those needs, and how this affects patterns of disease, healthcare systems, and societies at large.

Wide consultation of various stakeholders is a prerequisite to the development of such scenarios, and data will be needed from a variety of sources. This will set different demands on the HTA expert (19). The task of this emerging policy professional would be not just to provide technical information for problem-solving, but also to combine it with a new function of facilitating public deliberation and learning (20;21). This will likely also involve a closer integration of quantitative and qualitative research methodology (22). Various international collaborative efforts have produced guidance that can be used to further strengthen the scientific basis of HTA, including AdHopHTA (www.adhophta.eu), INTEGRATE-HTA (www.integrate-hta.eu), MedtechHTA (www.medthechhat.eu), and EUnetHTA (www.eunethta.eu), which may also help to promote convergence in HTA tools, procedures, and methodologies, as proposed by the European Commission.

With this concept of HTA in mind, the SDCB committee will advise the Board of HTAi on next steps to foster scientific development and capacity building in HTA globally. These would include, but are not confined to conducting a survey among HTA Agencies, inquiring about training needs, and collating and reviewing existing materials that might be useful in this respect (Supplementary Table 2). Ongoing activities and results will be disseminated through HTAi's Web site (www.htai.org).

This study is primarily meant to inform the HTA community of the activities that are being undertaken within HTAi regarding the promotion of scientific rigor in the field of HTA. It provides a sense of the direction that the SDCB committee is currently taking, and by no means pretends to have presented an exhaustive overview of definitions of HTA or currently available relevant E-learning materials. Rather, it welcomes any comments, suggestions, and complementary information that the committee may want to consider in pursuing its objective.

Supplementary material. The supplementary material for this article can be found at https://doi.org/10.1017/S0266462319000539

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References

1. **WHO** (2015) *2015 Global Survey on Health Technology Assessment by National Authorities*. Geneva: WHO.
2. **Weinstein M, O'Brien B, Hornberger J, *et al.*** (2003) Principles of good practice for decision analytic modeling in health-care evaluation: Report of the ISPOR task force on good research practices – Modeling studies. *Value Health* **6**, 9–17.
3. **Squires H, Chilcott J, Akehurst R, Burr J, Kelly M** (2016) A framework for developing structure of public health economic models. *Value Health* **19**, 588–601. 5. Baio G (2017) Statistical modeling for health economic evaluations. *Ann Rev Statistics Appl* 5, 289–309.
4. **Husereau D, Drummond M, Petrou S, *et al.*** (2013) Consolidated health economic evaluation reporting standards (CHEERS) statement. *BMJ* **346**, doi.org/10/1136/bmj.f1049.
5. **Sharma T, Choudhury M, Rejon-Parilla JC, Jonsson P, Garner S** (2018) Using HTA and guideline development as a tool for research priority setting the NICE way. Reducing research waste by identifying the right research to fund. *BMJ Open* **8**, e019777
6. **Drummond M, Schwartz JS, Jonsson B, *et al.*** (2008) Key principles for the improved conduct of health technology assessments for resource allocation decisions. *Int J Technol Assess Health Care* **24**, 362–368.
7. **Panayidou K, Gsteiger S, Egger M, *et al.*** (2016) GetReal in mathematical modelling: A review of studies predicting drug effectiveness in the real world. *Res Synth Methods* **7**, 264–277.
8. **Kristensen FB, Lampe K, Chase DL *et al.*** (2009) Practical tools and methods for health technology assessment in Europe: Structures, methodologies, and tools developed by the European Network for Health Technology Assessment, EUnetHTA. *Int J technol Assess* **25**(Suppl 2), 1–8.
9. **Fischer F** (2009) *Democracy and expertise: Reorienting policy inquiry*. Oxford: Oxford University Press.
10. **Lehoux P** (2006) *The problem of health technology. Policy implications for modern health care systems*. New York / London: Routledge.
11. **Corluka A, Hyder AA, Segura E, Winch P, McLean RK** (2015) Survey of Argentine health researchers on the use of evidence in policymaking. *PLoS One* **10**, e0125711.
12. **Liu W, Shi L, Pong RW, *et al.*** (2018) Determinants of knowledge translation form health technology assessment to policy-making in China: From the perspective of researchers. *PLoS One* **13**, e0190732.
13. **McGregor M, Brophy JM** (2005) End-user involvement in health technology assessment (HTA) development: A way to increase impact. *Int J Technol Assess Health Care* **21**, 263–267.
14. **Rotstein D, Laupacis A** (2004) Differences between systematic reviews and health technology assessments: A trade-off between the ideals of scientific rigor and the realities of policy making. *Int J Technol Assess Health Care* **20**, 177–183.
15. **Rocchi A, Chabot I, Glennie J** (2015) Evolution of health technology assessment: Best practices of the pan-Canadian Oncology Drug Review. *Clinicoecon Outcomes Res* **7**, 287–298.
16. **Wild C, Stricka M, Patera N** (2017) Guidance for the development of a national HTA strategy. *Health Pol Technol* **6**, 339–347.
17. **Sadowski J** (2015) Office of Technology Assessment: History, implementation, and participatory critique. *Technol Soc* **42**, 9–20.
18. **van der Wilt GJ, Kievit W, Oortwijn W** (2017) The added value of integrate-HTA guidance in the work processes of Health Technology Assessment agencies. *Int J Technol Assess Health Care* **33**, 597–598.
19. **Forsberg EA, Quaglio GL, O'Kane H, Karapiperis T, van Woensel L, Arnaldi S** (2015) Assessment of science and technologies: Advising for and with responsibility. *Technol Soc* **42**, 21–27.
20. **Fischer F** (2004) Professional expertise in a deliberative democracy. *The Good Society* **13**, 21–27.
21. **Coates JF** (2016) A 21st century agenda for technology assessment. *Technol Forecast Soc Change* **113**, 107–109.
22. **O'Çathain A, Murphy E, Nicholl J** (2007) Why, and how, mixed methods research is undertaken in health services research in England: A mixed methods study. *BMC Health Serv Res* **7**, 85.

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