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Systematic Literature Review

Adaptive Health Technology Assessment: A Scoping Review of Methods

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ABSTRACT

Objectives: Health technology assessment (HTA) is an established mechanism for explicit priority setting to support universal health coverage. However, full HTA requires significant time, data, and capacity for each intervention, which limits the number of decisions it can inform. Another approach systematically adapts full HTA methods by leveraging HTA evidence from other settings. We call this "adaptive" HTA (aHTA), although in settings where time is the main constraint, it is also called "rapid HTA."

Methods: The objectives of this scoping review were to identify and map existing aHTA methods, and to assess their triggers, strengths, and weaknesses. This was done by searching HTA agencies' and networks' websites, and the published literature. Findings have been narratively synthesized.

Results: This review identified 20 countries and 1 HTA network with aHTA methods in the Americas, Europe, Africa, and South-East Asia. These methods have been characterized into 5 types: rapid reviews, rapid cost-effectiveness analyses, rapid manufacturer submissions, transfers, and de facto HTA. Three characteristics "trigger" the use of aHTA instead of full HTA: urgency, certainty, and low budget impact. Sometimes, an iterative approach to selecting methods guides whether to do aHTA or full HTA. aHTA was found to be faster and more efficient, useful for decision makers, and to reduce duplication. Nevertheless, there is limited standardization, transparency, and measurement of uncertainty.

Conclusions: aHTA is used in many settings. It has potential to improve the efficiency of any priority-setting system, but needs to be better formalized to improve uptake, particularly for nascent HTA systems.

Keywords: adaptive health technology assessment, health economics, health systems.

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Introduction

Policy makers working to achieve universal health coverage must balance limited financial resources with increasing demand for healthcare services.[1-3] One approach to this challenge is to shift from ad-hoc "implicit" rationing of services to "explicit" rationing, which uses evidence to explicitly decide which services to fund.[4]

A common approach to explicit priority setting is health technology assessment (HTA). HTA is "a multi-disciplinary process that uses explicit methods to determine the value of a health technology… to inform decision-making… to promote equitable, efficient, and high-quality health system.[5]" Health technologies for example include drugs, procedures, or public health interventions. Many countries in Europe, Latin America, and Asia already have established HTA systems.[6]

However, there are thousands of existing and emerging health technologies worldwide. Only a small fraction of them can be evaluated using full HTA, which requires an intensive process of evaluation, systematic review, and cost-effectiveness analysis (CEA).[7,8] Furthermore, there is often a disconnect between the time full HTA takes and the time policy makers have to make decisions.[9]

Due to these constraints, countries are increasingly using various methods for "rapid HTA.[10]" Although established HTA systems often adapt HTA to reduce the time needed to respond to urgent policy questions, in nascent HTA systems, capacity and data scarcity may also drive simplification, compared with established practice, globally.[11] Indeed, it is increasingly common to avoid duplication and leverage published evidence (eg, from HTA reports, systematic reviews, and economic evaluations) from other settings in decision making.[7]

The focus of this review is "adaptive" HTA (aHTA), which builds on rapid HTA to adapt for analytical time, data, capacity, and source of conduct. With a view toward standardizing aHTA nomenclature globally, we propose to define aHTA as follows: "a structured approach to selecting and conducting the optimal HTA analysis. It produces efficient HTA results by adjusting for analytical time, data, capacity, and source of conduct, leveraging information from other settings where possible."

Despite increasing aHTA practice, there are no standardized norms or nomenclature for aHTA.[12,13] A recent World Health Organization survey found that 45 of 97 countries had provisions for rapidly assessing and appraising evidence, but further details of these methods were unavailable.[10] What constitutes "full HTA" versus "aHTA" remains ill-defined.

The objectives of this review were to identify and map "aHTA" methods, summarize what "triggers" institutions to use aHTA, and synthesize the evidence on aHTA strengths and weaknesses. Our primary target audience was practitioners in nascent HTA systems who may benefit from a structured explanation of different approaches to aHTA that allows adaptation for local constraints.

Methods

This scoping review was guided by the Joanna Briggs Institute Manual for Evidence Synthesis[14] and reported using the Preferred Reporting Items for Systematic Review and Meta-Analysis extension for scoping reviews (Appendix 1 in Supplemental Materials found at https://doi.org/10.1016/j.jval.2023.05.017).[15]

For clarity, we used the International Network of Agencies for Health Technology Assessment (INAHTA) definition of "full HTA." INAHTA defines it as always describing the technology, evaluating safety and effectiveness through a systematic literature review, calculating cost-effectiveness using economic modeling, estimating budget impact, and critically appraising the quality of the evidence.[16] We used the only available aHTA definition to guide our search: "a blanket approach to HTA methods and processes which are fit-for-purpose and focused on context-specific practicality constraints. Methodologically, aHTA may leverage or adapt available international data, economic evaluations, models, or decisions from the published literature or established HTA agencies to expedite policy decisions while adequately accounting for concerns of transferability and uncertainty.[12]" Generally, we anticipated that aHTA may be called "rapid HTA" or similar in other countries.

Literature Review Approach

The literature search had 2 stages.

Using the World Health Organization's global list of HTA agencies, members of INAHTA, and members of the HTA Network of the Americas (RedETSA), we first identified a long list of HTA agencies and networks (n = 88) (Appendix 2 in Supplemental Materials found at https://doi.org/10.1016/j.jval.2023.05.017).[17-19] We then reviewed their websites to identify any HTA guidance or institutional reports that fit our definition of aHTA. We did not impose a time limit. Publications in English and Spanish were also included, the latter because of known practice of transfers in Latin America.[20] Gray literature in additional languages was reviewed using Google Translate.[21] We excluded articles that apply aHTA methods, and rapid methods for horizon scanning.

The peer-reviewed literature search was then constructed using terms identified in the gray literature. This included any words to describe rapid (or adaptive) HTA methods. Publications from 2006 onward were reviewed because this is when there was the first uptick in rapid HTAs being produced.[22] Included articles provided additional details on aHTA methods from the gray literature, detailed aHTA methods not found in the gray literature, or aHTA strengths or weaknesses. We excluded articles on application of the method. Our focus was on national or regional HTA; thus, we also excluded "hospital-based" or "mini" HTAs.[23]

Specific inclusion and exclusion criteria can be found in Appendix 3 in Supplemental Materials found at https://doi.org/10.1016/j.jval.2023.05.017.

Search Strategy and Screening

Each HTA agency's website was screened by 2 reviewers in September and October 2021. aHTA methods that were detailed enough to understand and apply the method were included. Conflicts regarding inclusion were resolved by consensus discussions between the 2 reviewers.

The published literature search was run on February 17, 2022 in EMBASE, Global Health, Global Index Medicus, Medline (via Ovid), SCiELO, SCOPUS, and VHL. The final strategy was reviewed using the Peer Review of Electronic Search Strategies guideline (Appendix 4 in Supplemental Materials found at https://doi.org/10.1016/j.jval.2023.05.017).[24] Duplicates were removed, and titles and abstracts were each screened by 2 reviewers for eligibility using Covidence software.[25] Conflicts were resolved by consensus. The same was done for full text review. A follow-on citation search was conducted using the Web of Science Core Collection on June 30, 2022. The same screening and selection approach was used.

Data Extraction and Synthesis

Microsoft Excel was used to extract information from the gray literature, including country, agency/department, name, year, objective/purpose, timeline, details of the approach, including topic selection, methods, appraisal and implementation, producer of analysis, triggers, strengths, and weaknesses. Covidence was used to extract information from the peer-reviewed literature, including new aHTA approaches, further details of approaches from the gray literature, strengths, and weaknesses. This was done by the first author and checked by coauthors. Through extraction, we found the focus of adaptations to be on aHTA methods and narrowed our synthesis accordingly.

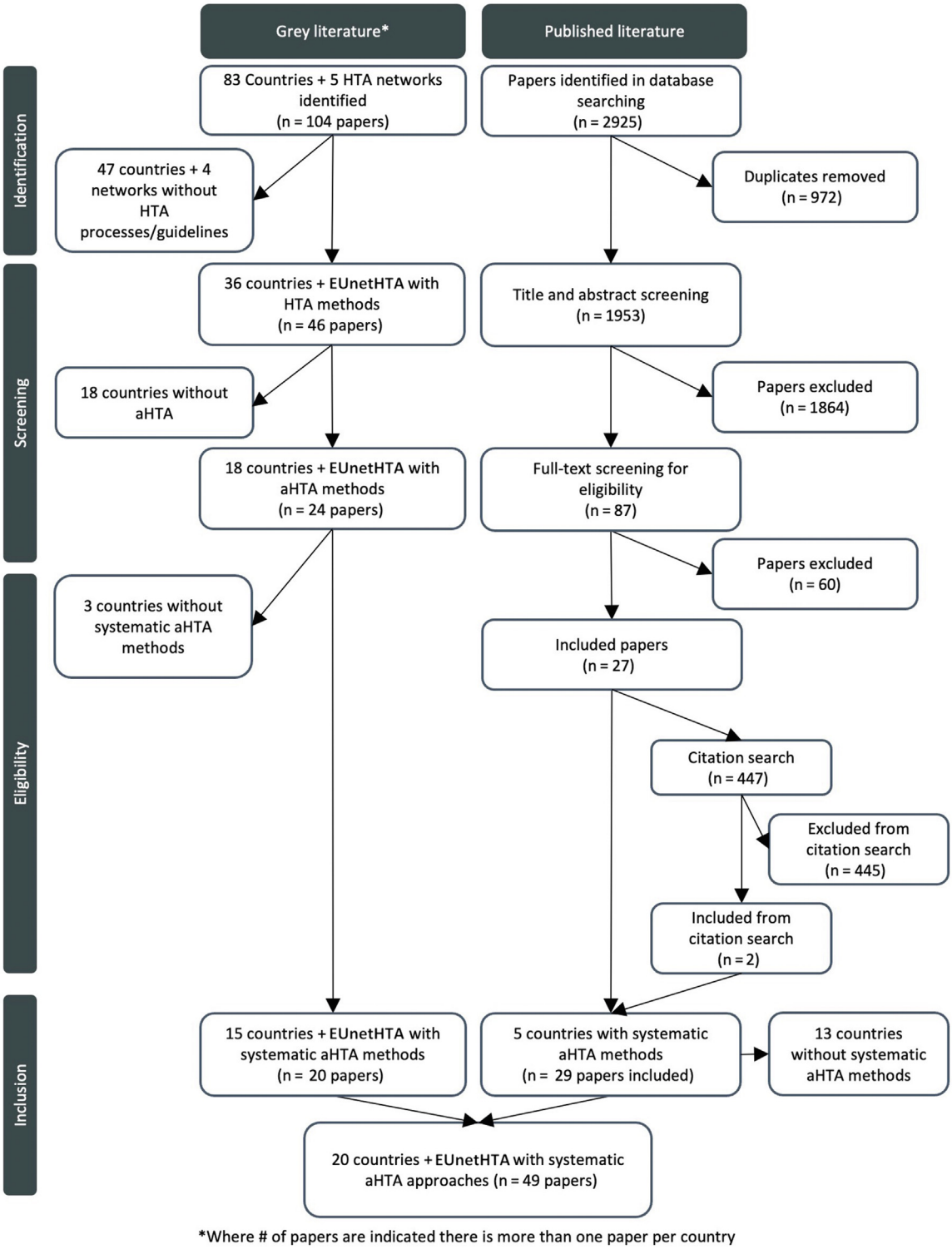
To categorize the methods, we first reviewed self-reported names to bucket the methods into categories. We then reviewed the methodological details and identified recurring adaptive characteristics, alongside the producer of the analysis to check for consistency. This was used to finalize the categorization. Further details of the method for developing the taxonomy can be found in Appendix 5 in Supplemental Materials found at https://doi.org/10.1016/j.jval.2023.05.017 and the full extraction is available in Supplement 1.

Results

In the gray literature, we identified 83 countries with a national HTA agency and 5 HTA networks for review. Of those, 15 countries and 1 HTA network (European Network for HTA [EUnetHTA]) were identified to have aHTA methods (n = 16 of 88 HTA agencies and networks, 20 articles). Of the 15 countries, 7 are EUnetHTA members that also had national aHTA methods.

The published literature search identified 2925 studies; duplicates were removed, and 1953 articles remained. Title and abstract screening removed 1864 studies, leaving 87 for full text review. Of those, 27 studies were included. Reasons for full text exclusion included irrelevance, lack of adaptation, or focus on hospital-based HTA. The citation search identified 447 additional studies, from which 2 articles were added. The most common reason for exclusion on the citation search was saturation of information. All 29 peer-reviewed articles included, evaluate the strengths or weaknesses of aHTA methods. Additionally, these articles provided details of England and Scotland's aHTA methods first identified in the gray literature and found 5 more countries with aHTA methods for inclusion (Fig. 1).

Figure 1. PRISMA diagram.

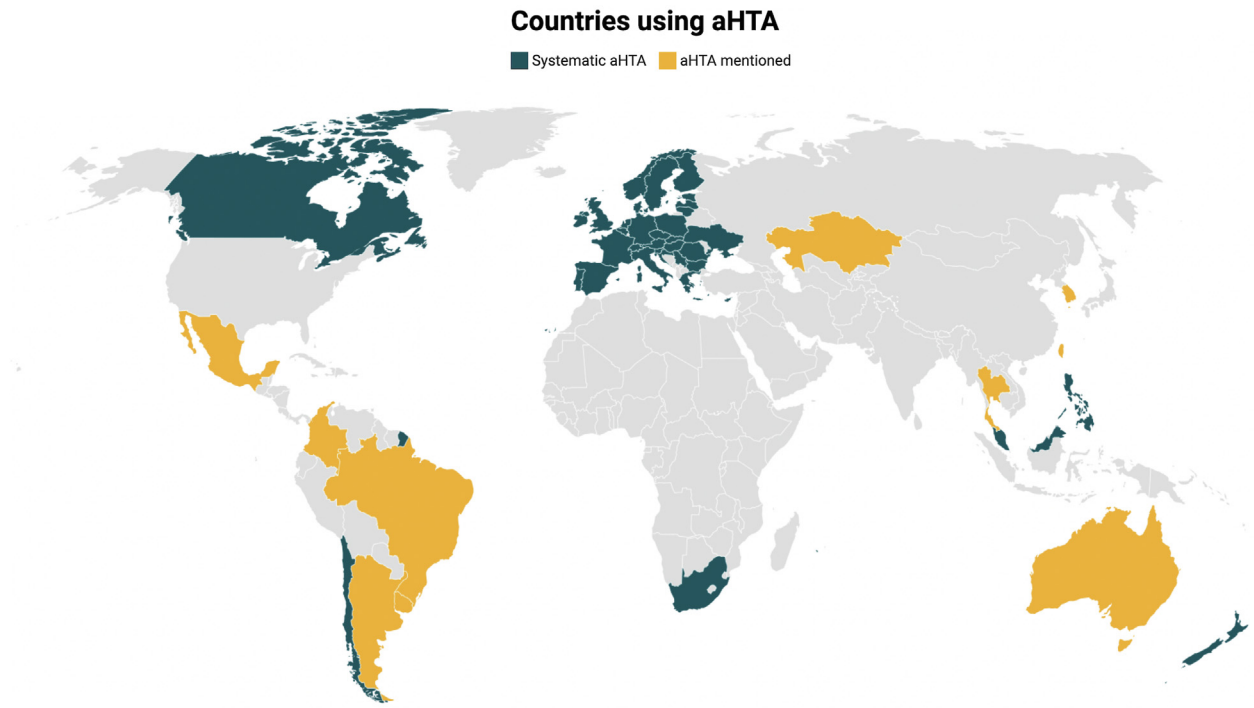


aHTA indicates adaptive health technology assessment; EUnetHTA, European Network for HTA; HTA, health technology assessment; PRISMA, Preferred Reporting Items for Systematic Review and Meta-Analysis.

Together, a total of 35 countries and 1 network were identified to have aHTA methods, but only the 20 countries (15 from gray literature + 5 from published) and EUnetHTA members included had aHTA methods, which we could report on in detail (n = 21 of 88). These are depicted in Figure 2, with all countries with detailed aHTA methods in blue, and those without detailed methods in yellow.

A full list of the articles included is in Appendix 6 in Supplemental Materials found at https://doi.org/10.1016/j.jval.2023.05.017.

Figure 2. Countries using aHTA.



aHTA indicates adaptive health technology assessment.

Triggers of aHTA Methods

aHTA is used differently in different settings. Nevertheless, we identified 3 recurring characteristics that trigger the use of aHTA methods, enabling analysts to balance the need for evidence with the consequence of making the wrong decision. These include urgency (n = 17), certainty (n = 7), and low budget impact (n = 5) (Table 1). Importantly, how these triggers are defined vary across jurisdictions.

aHTAs supports questions that policy makers need answered urgently or efficiently. This includes questions about procurement and clinical practice in Belgium, essential medicines listings in South Africa, subsidies for medical devices and diagnostics in Singapore, and public health emergencies in the Philippines, and specifically COVID-19 in France.[26-31]

Certainty captures technologies for which the research question is simple, evidence is certain, or cost-effectiveness is likely. Single technologies or simple decision problems are common in aHTA.[26,30,32-34] For example, Malaysia's "mini-HTA" reviews single technologies for the Ministry of Health.[32] For technologies that have relatively certain and robust clinical and cost data, aHTA is more likely.[29,30,35-37] For example, expediting Singapore's medical technology and drug and vaccine evaluations requires certainty regarding clinical and cost parameters.[29,35] Additionally, technologies that are likely to be cost-effective are subject to aHTA in England's fast-track appraisal and Ireland's rapid review (RR).[37,38]

Finally, aHTA is used for technologies with an expected low budget impact and thus with a lower consequence of decision error. This includes technologies implemented on a small scale in Denmark or those expected to have an equivalent or lower cost than their alternative in Scotland.[29,35–40]

Using a combination of these triggers, some countries apply rapid HTAs first, and then HTA practitioners decide whether full HTA is needed.

Examples include Ireland, where all medicines undergo an initial RR. Those with higher costs relative to potential comparators or with questionable comparative efficacy or value for money are subject to full HTA.[41] New Zealand has varying levels of rapid CEA. Practitioners conduct further analysis based on time required, expected budget impact, certainty of results, available information, and available resources for analysis.[36] In South Africa, an initial RR is completed. Additional targeted analyses are done if there is significant uncertainty related to clinical effectiveness, cost, cost-effectiveness, or other factors.[30] In the Philippines, clinically noninferior technologies are only subject to cost-minimization analysis and budget impact analysis, whereas clinically superior technologies are routed to full CEA and budget impact analysis.[42] In England, the interventional procedure method refers a research question to systematic review if the evidence base is too large, the procedure may result in serious adverse events, or the procedure has >1 indication or employs >1 technique.[43]

Figure 3 streamlines triggers used in England, Ireland, New Zealand, Scotland, and Singapore into a single illustrative process.

This iteration can be used to support improved efficiency in decision making. For example, a review of 10 years of Ireland's RR showed that half of medicines were subject to full HTA and the other half to aHTA. If all drugs had been subject to full HTA, 15 000 more appraisal days would have been required.[44]

Types of aHTA

We identified 5 types of aHTA methods: RR, rapid manufacturer submissions, transfers, rapid CEA, and de facto HTA. These are briefly summarized in Figure 4. This is not meant to be prescriptive, but rather provide a framework to illustrate broad differences between the types. More details can be found in Appendix 7 in Supplemental Materials found at https://doi.org/1

Table 1. Triggers of aHTA

Country/network	Urgency	Certainty	Low budget impact
Belgium	x	x	
Bulgaria	x		
Canada	x		
Chile	x		
Croatia	x		
Denmark			x
England		x	x
EUnetHTA	x		
France	x		
Hungary	x		
Ireland	x		
Malaysia		x	
New Zealand	x	x	x
Philippines	x		
Romania	x		
Scotland		x	x
Serbia	x		
Singapore	x	x	x
Slovakia	x		
South Africa	x	x	
Spain	x		
Total	17	7	5

aHTA indicates adaptive health technology assessment; EUnetHTA, European Network for HTA.

0.1016/j.jval.2023.05.017 and Supplement 1 in Supplemental Materials found at https://doi.org/10.1016/j.jval.2023.05.017.

Rapid review

RR reviews and synthesizes HTA results from other contexts.

RR was originally mentioned in the literature in 1997.[45] It often refers to rapid methods for systematic reviews, but it is also commonly applied to HTA.[16] Reviews of RRs indicate that there is vast heterogeneity in their application.[33,46] Nonetheless, typical adaptations include narrowing research questions, number of databases, data abstraction and synthesis, using a single reviewer for screening, and omitting analysis of bias and quality.[47]

RRs can inform multiple decisions. They provide information on medical, surgical, and dental technologies to healthcare decision makers.[32,48-51] They also inform inclusion on the national formulary, essential medicines lists, and standard treatment guidelines.[30,42,43]

Methods for RR were found in Belgium,[26] Canada,[48-50] Chile,[52] Denmark,[53] France,[54] Malaysia,[32] Philippines,[42] South Africa,[30] Spain,[31,51] and England.[43] Although referred to as "rapid," the time required ranges widely. A summary of abstracts in Canada takes 5 days, whereas an appraisal of interventional procedures in England takes 9 months.[43,50]

Rapid manufacturer submissions

Rapid manufacturer submissions require manufacturers to drive the HTA analysis, which is then critically appraised.

This typically requires manufacturers to submit information on clinical effectiveness, cost-effectiveness (often including a model), and expected budget impact.[29,35,37,40,55,56] It is used to make decisions about whether to reimburse new drugs to the market, or to determine whether full HTA is needed. Indeed, full HTA processes also use manufacturer submissions. Rapid manufacturer submissions are however a specific form of aHTA method used by agencies that rely predominately on the manufacturer's evidence. It is only triggered if the technology meets specific criteria such as certainty and low expected budget impact (eg, <$1-$2 million per year).[29,35,38,57] Countries that employ rapid manufacturer submissions include Denmark,[55] Ireland,[56] Scotland,[40] Singapore,[29,35] and England.[37]

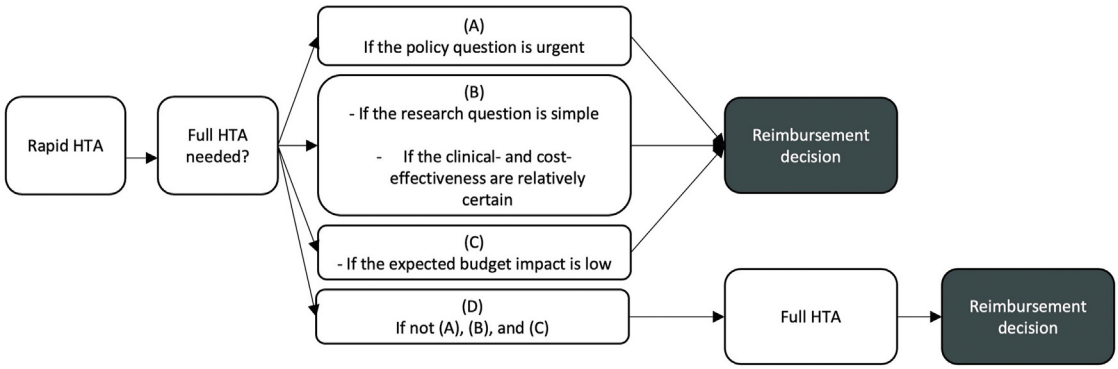
Transfers

Transfers use a structured process or checklist to determine and guide the transfer of evidence from 1 jurisdiction to another.

There are many frameworks for transferring HTA evidence.[58] This is different from generalizability, which adopts an existing HTA from another jurisdiction without adjustments. Studies are often evaluated for their quality, transparency, level of reporting, and local relevance.[58] Then they can be transferred locally using a combination of global data on transferable parameters (eg, relative effectiveness and utility values) and local data on less transferable parameters (eg, baseline disease risk, unit costs, and resource use).[59]

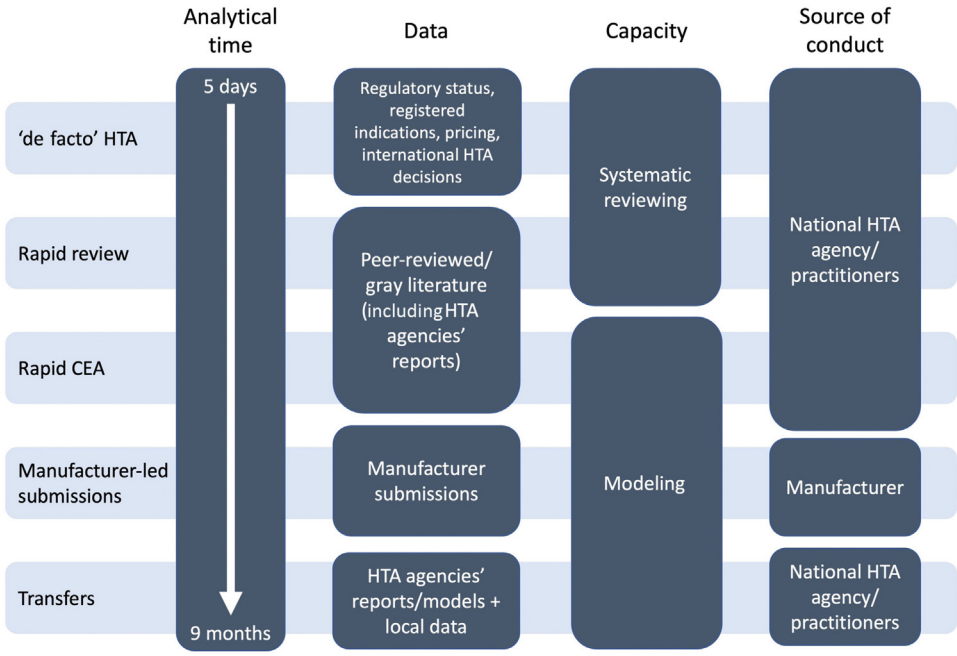
Transfers are used to inform reimbursement or coverage decisions, and price negotiations and decisions.[60] The EUnetHTA has

Figure 3. Iterating aHTA.



aHTA indicates adaptive health technology assessment; HTA, health technology assessment.

Figure 4. Characterization of aHTA methods identified.



aHTA indicates adaptive health technology assessment; CEA, cost-effectiveness analysis.

a detailed adaptation toolkit that can be adjusted for individual countries, such as Croatia.[61,62]

Rapid CEA

Rapid CEA builds basic economic models using opportunistically sourced or rapidly collected local data.

In contrast to RRs, it requires building a de novo model, and in contrast to rapid manufacturer submissions, modeling is done in-house rather than being outsourced to pharmaceutical companies. Rapid CEA is used to inform inclusion on essential medicines and immunization lists.[30,36] Two rapid CEA methods were found in New Zealand and South Africa.[30,36]

De facto HTA

De facto HTA varies in scope. Generally, it reviews some combination of local and international regulatory status; registered indications; drug prices; and clinical effectiveness, costs, and cost-effectiveness from other HTA agencies.

Documentation of this approach is solely focused on medicines. It has also only been used as a rapid screening procedure for manufacturer submissions, to decide what further information is needed to inform medicines reimbursement.

Methods for de facto HTA were identified in Romania and called by the same name.[63,64] A similar approach called a "balanced assessment system" was tested in Bulgaria, Hungary, Serbia, and Slovakia.[65] These are the only methods found that have not been institutionalized by HTA agencies; as a group, they have faced criticism regarding whether they adequately address transferability issues.[65,66]

Strengths and Weaknesses of aHTA

Strengths and weaknesses of aHTA methods were assessed in the 29 peer-reviewed articles using systematic review (n = 2), literature/aHTA report review (n = 15), systematic survey (n = 4), or expert opinion of coauthors (n = 8).

Overwhelmingly, the most cited strength of aHTA was that it was faster than full HTA—faster conduct and faster decisions means faster access to care for patients and market access for manufacturers.[7,38,44,60,64,67-70] Further, aHTA is popular among decision makers because it responds to their needs. In Canada, hundreds of them are requested annually.[9,65,71] RRs were viewed as having similar results to systematic reviews.[34] Transfers were viewed as reducing duplication and variability across settings.[7,31,66,72] Rapid manufacturer submissions potentially encourage reduced prices to avoid full HTA.[38] Both transfers and rapid manufacturer submissions were considered more "efficient" by optimizing agency resources to focus on select full HTAs.[38,44,66,69]

All methods were found to be heterogenous and lack standardized guidance.[7,34,46,47,55,73,74] Even the elements of analysis included (modifications to full HTA evaluation of safety and efficacy, cost-effectiveness, and budget impact) vary between aHTA methods and within them, between countries.

RRs are generally inconsistent in definition, methods, and application. Reporting of methods is often inadequate or not transparent.[33,46,55,74,75] This makes it difficult to distinguish a good RR from a poor systematic review.[47] Additionally, quality of the studies included is often not assessed.[33,67,70,76] There is no consistency in measuring or reporting uncertainty of the information in RRs, which risks making unreliable conclusions.[33] Although there is a clear trade-off between rapid advice and losing detail from a more comprehensive method, there is no quantified understanding of this trade-off. Thus, there is no guidance on the consequences of aHTA, which could significantly impact health systems' budgets and patients' health.[9,70,77]

Cited obstacles to transfers included differences in practice patterns or standard of care, lack of applicability because of

differences in gross domestic product, and poorly reported studies.[60] Reliance on rapid manufacturer submissions were generally found to not be as fast as expected in England[68,78] and not transparent in decision making in Ireland and Denmark.[38,55]

Discussion

The use of aHTA is widespread; of the 88 HTA agencies and networks we reviewed globally, 35 reported using aHTA, and of those, 21 had aHTA documentation which we could report on in detail. The majority of these exist in high-income countries (n = 15 of 21). Most aHTA methods improve the speed of results available to decision makers and are triggered by urgency, certainty, and low budget impact. Some countries use an "iterative" HTA approach to decide whether it is cost-effective to do a full HTA or whether a reasonable conclusion can be drawn in its absence. aHTA can be fast and efficient, useful for decision makers, and reduce duplication. Nevertheless, it varies in methods and which technologies it applies to, has limited transparency in reporting and quality, and has limited measurement of uncertainty.

The Importance of aHTA for All HTA Systems

aHTA has its critics. There is a concern that aHTA could challenge the perceived "gold standard" of HTA. Some might argue that the gold standard from an evidence perspective is full HTA with the best possible data, giving the most precise and locally relevant evidence. However, as with the whole health sector, there is a limited budget for HTA, and there is an opportunity cost associated with full HTA. The triggers identified demonstrate that there are instances where aHTA is appropriate and can supplement or replace full HTA to maximize population health more efficiently.

The need for aHTA is particularly acute in nascent HTA systems. Many countries seeking to achieve universal health coverage are working to use HTA methods to prioritize entire health benefits packages. This can affect large-scale allocative efficiency gains (eg, Ethiopia[79]). Yet, doing full HTAs for tens or hundreds of interventions further exacerbates the challenge in balancing policy makers' decision time frames and analytical rigor. Health benefits package exercises could benefit equally from aHTA methods, but likewise, the methods lack categorization. This limits their conduct to HTA experts making pragmatic judgments about how to ensure the methods are maximally efficient.

Advancing aHTA Development

Further developments of aHTA should focus on ensuring the efficiency and iteration of HTA methods, avoiding duplication, and making the best use of existing evidence.

There is a need to determine when aHTA is appropriate and which method to use. Work could be done to build on existing iterative approaches, routing topics that meet certain triggers to aHTA or full HTA. It could articulate which technologies should be subject to which aHTA method. It could also explore additional triggers beyond those identified here. For example, we would have expected very high-cost interventions with limited clinical benefit as good aHTA candidates, although this criterion was not found in the literature. This could be summarized in a locally tailored version of Figure 3.

Additionally, better clarity on the aHTA methods articulated here is required for its replicability. This could be done by drawing on experiences of aHTA practitioners from normative bodies, including HTA agencies and networks.

Finally, more consideration should be given to where aHTA is conducted and what evidence it draws on. Common reference countries for aHTA practitioners include the United Kingdom, Australia, and Canada,[60] but these are not representative health systems. Newer HTA agencies may seek to source evidence from their respective geographic regions.

Limitations

This article sought to systematically categorize aHTA methods. Since aHTA is a new term, the definition itself is a limitation. The definition we presented in the introduction is a proposed revision to the existing definition which guided our search in the methods. It draws on the findings of this review to add the dimensions of analytical time, data, capacity, and source of conduct as the key characteristics of aHTA. These distinguish it from rapid HTA to highlight that it is about more than just time. It would further benefit from consultation with wide-ranging experts in the same way redefining HTA was done.[5]

To develop a taxonomy of aHTA methods, it needed to be informed by well-defined methods with enough detail for categorization. This was easier for RR, where systematic reviews have been done to define them and their characteristics,[47] whereas there was less consistency in reporting the other types. We did not identify names a priori but have tried to reflect as best we can the names found in the literature. Although our taxonomy may not be perfect, it is a first step to bucketing aHTA methods into broad categories so that they can be replicated and reported consistently.

Further, categorization relied heavily on the gray literature, which was limited to HTA agencies' websites, and to methodological guidance rather than applied articles. Agencies were not contacted; therefore, some guidance may be outdated. We may have also missed aHTA methods if only applied articles have been published or, indeed, have not been published at all. Disproportionately, established HTA agencies in high-income countries had detailed guidelines; therefore, our results are biased toward their practice. We were unable to capture the nuances of the 14 other countries mentioned to conduct aHTA, including Argentina, Australia, Brazil, Colombia, Germany, Kazakhstan, South Korea, Mexico, The Netherlands, Poland, Switzerland, Taiwan, Thailand, and Uruguay.[34,46,60,63,72-74,77] They may have aHTA methods that vary from our review.

The published literature search was focused on triggers, strengths, and weaknesses of aHTA, alongside more details on methods. The former were difficult to extract as many articles were descriptive in nature. Additionally, the search combined the concepts "HTA" and "rapid." We therefore may have missed details on rapid CEA. Nevertheless, because all CEA is somehow "adaptive" and we were seeking to only capture detailed aHTA methods, we justified limiting the approach in this way. Likewise, we excluded articles on the history of HTA, which could include the use of aHTA. This body of literature is substantial and would warrant its own review. The citation search identified several articles refining the methods for RRs, which we excluded because of saturation of information.

Finally, we are aware of protocols and applications of aHTA-like methods, which have been undertaken in various settings. These include, for example, the hospital-based HTA methods we excluded. Their methods may be relevant when designing an iterative approach to aHTA to rule out specific technologies that are obviously good (or bad) value for money.

Conclusions

Decisions in the health system will be made regardless, but implicit rationing will occur unless explicit methods are used. aHTA is used widely but is poorly defined; it must be better

established to support the overall efficiency of any country's priority-setting system, and particularly nascent HTA systems.

Supplemental Material

Supplementary data associated with this article can be found in the online version at https://doi.org/10.1016/j.jval.2023.05.017.

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