

Policy

Cite this article: de Soárez PC, Pepe VLE, Novaes HMD (2021). Hospital-based health technology assessment in Brazil: current experiences and challenges. *International Journal of Technology Assessment in Health Care* 37, e86, 1–7. <https://doi.org/10.1017/S0266462321000581>

Received: 5 January 2021
Revised: 27 July 2021
Accepted: 13 August 2021

Key words:

Technology assessment, Biomedical; Hospital-based health technology assessment; Decision making; Health technology assessment

Author for correspondence:

Patricia Coelho de Soárez, E-mail: patricia.soarez@usp.br

Hospital-based health technology assessment in Brazil: current experiences and challenges

Patricia Coelho de Soárez¹ , Vera Lúcia Edais Pepe²
and Hillegonda Maria Dutilh Novaes¹

¹Departamento de Medicina Preventiva, Faculdade de Medicina, Universidade de Sao Paulo, Sao Paulo, SP, Brazil and ²Departamento de Administração e Planejamento em Saúde, Escola Nacional de Saúde Pública Sergio Arouca, Fundação Oswaldo Cruz, Rio de Janeiro, RJ, Brazil

Abstract

In Brazil, there is no consensus on the concept of hospital-based health technology assessment (HB-HTA). There is great variability in the existing models and difficulty in evaluating their results—whether in respect of clinical decisions, quality of care, and hospital policy and management or in respect of optimizing the use of resources. This study aims to discuss the experiences of HB-HTA, its integration into the regulatory system for the adoption of new technologies into the Brazilian public (SUS) (Unified Health System), and its main challenges. During a workshop, a panel of specialists in HTA and/or HB-HTA was formed, representative of four different perspectives: (i) Health services and health technology assessment units, (ii) Academia, (iii) Secretary of State for Health, and (iv) the Federal SUS sector. This was followed by discussion, a preliminary consensus, contributions from the audience, a plenary session, and a final consensus. HB-HTA is not institutionalized, nor is it part of the regulation system for the adoption of new technologies in the SUS. The main challenges are the difficulties in creating qualified teams, financial support, and sustainability. The work of these bodies in respect of the evaluation of new technologies deserves further studies analyzing the relationship between the pressure for adoption from the hospital team and industry professionals and legal rulings. It is necessary to strengthen HB-HTA culture and implement this policy in hospital management, making assessment bodies a part of managerial and decision-making processes in hospitals, and develop regional collaborative networks and a national network of HTA.

Introduction

Hospitals very often act as gateways for technological innovations. Managers need to quickly determine the value of a new technology to decide on its implementation in the hospital. Hospital-based health technology assessment (HB-HTA) has sought to assist this decision-making process through the implementation of HTA activities, which include processes and methods of organization, and the implementation of HTA at the hospital level using a systematic evidence-based multidisciplinary approach (1).

Recently, there has been an increase in HB-HTA organizations at the local level (2). This trend is not the result of the weakening of HTA as support for decision-making policies at the macro level (national) but is related to the growing realization that judgments about the value of health technologies should consider the organizational specific context. HB-HTA can be adapted to meet the needs and deadlines of local decision makers, including local clinical practice data (patient profile and case mix) and associated costs. The value is assessed based on estimates of clinical benefit for patients, gains in institutional efficiency, safety improvements, or better alignment with the values of the institution or its patients (3).

The increased use of the HB-HTA approach can assist managers to respond to the “pressures” imposed by the market. An internal HTA body can help to create a positive organizational context, facilitate the use of scientific evidence, and support clinical practice and decision making in hospital management (4). If HTA uses the theories, models, and instruments of implementation science, it can include the context and values of all stakeholders, facilitating a dialog between researchers and those interested in technological adoption (5–7).

The Brazilian health system is a mixed public–private system made up of three subsectors: the public subsector—*Sistema Único de Saúde (SUS)* (Unified Health System); which is universal and free for everyone; the private subsector; and the private health insurance subsector that covers approximately 25% of the population. The SUS ensures universal access to health and is financed by the state, at the federal, state, and municipal levels, through tax revenues and social contributions. The private subsector is financed with public and private funds. The private health insurance subsector is financed with insurance premiums and tax subsidies

(8). Total health spending is approximately 9.5% of its gross domestic product (9). However, the public spending in 2018 was only 42%. Its chronic underfunding was worsened by the approval of the 95th Constitutional Amendment, which froze the federal government expenditures for 20 years, making these resources even more limited to acquire and deliver technological innovations.

In Brazil, the main decisions about the adoption of technologies take place at the federal level. HTA policy at the central macro level has been discussed since the 1980s. However, its institutionalization began only in 2004, with the establishment of working groups and commissions. This culminated in the establishment of the *Comissão Nacional de Incorporação de Tecnologias no Sistema Único de Saúde (CONITEC)* (the National Commission for the Adoption of Technologies in the Unified Health System) in 2011, which has made important advances during the last decade, despite the enormous challenges that still exist (10). The CONITEC has the mission of advising the Ministry of Health (MoH) with regard to the adoption, exclusion, or change in use of health technologies, and in the definition, and when necessary, modification of the respective clinical protocols and therapeutic guidelines, to be used in the SUS. The CONITEC receives and analyzes requests for the adoption of technologies from different actors, including companies, agencies in the health and justice sector, medical societies, and patients' associations (11;12).

The structure of the CONITEC involves two bodies: the Executive Secretariat and the Plenary. The first one is formed by ninety technicians, who conduct and also commission evidence synthesis (systematic reviews and economic evaluations) for academic institutions or research centers and are responsible for producing scientific assessments of safety, efficacy, effectiveness, cost-effectiveness, and budget impact of technologies in the SUS. The Plenary has thirteen members, including representatives from seven secretariats of the Ministry of Health, from its regulatory bodies—*Agência Nacional de Vigilância Sanitária (ANVISA)* (the National Agency for Sanitary Surveillance) and *Agência Nacional de Saúde Suplementar (ANS)* (the National Regulatory Agency for Private Health Insurance and Plans), from the *Conselho Nacional de Secretários de Saúde (CONASS)* (the National Council of Health Secretaries), and *Conselho Nacional de Secretarias Municipais de Saúde (CONASEMS)* (the National Council of Municipal Health Secretaries), and representatives from civil society, from the *Conselho Federal de Medicina (CFM)* (the Federal Council for Medicine) and the *Conselho Nacional de Saúde (CNS)* (the National Council of Health). The plenary receives the assessment and is responsible for the judgmental appraisal, making nonbinding recommendations as to whether a technology should be adopted or not within the SUS.

The HTA process is publicly funded, conducted mainly by the state at the national level under the responsibility of the CONITEC. Since its implementation in March 2012 until May 2021, the CONITEC has provided recommendations in HTA reports for about 600 health technologies, around 70% of which were drugs (13). However, it is the *Secretaria de Ciência, Tecnologia e Insumos Estratégicos (SCTIE)* (the Secretary of Science, Technology and Strategic Inputs) of the MoH who possess the power of making the final recommendation about adoption, exclusion, or change in use of health technologies in the SUS (11;12). Research networks and HTA centers at the regional and local levels are supposed to assume a complementary role to that of the CONITEC, but so far, they have carried out few studies to support state and municipal Health Secretariats (14).

In 2009, 24 *Núcleos de Avaliação de Tecnologias em Saúde (NATS)* (Health Technology Assessment Units) were implemented in public teaching hospitals with funding from the Ministry of Health. NATS are a part of the Federal-Level Government's strategy of introducing the HTA culture in these hospitals, using available scientific evidence to assist the hospital managers in making decisions regarding the adoption and rational use of new technologies, and the evaluation of widespread use of adopted technologies (15;16). Despite the policy of creating NATS, hospital-based initiatives are still scarce and underdeveloped in the country (14;17). This can be explained by the fact that this policy was not demanded by the clinical or managerial staff of hospitals but by the Federal-Level Government.

There is considerable variability among the HB-HTA existing models and practices and no consensus as to which practices should be considered examples of good practice. It is also difficult to evaluate their results on clinical practice, quality of care, or aspects related to policy and the management of hospitals, as well as in the optimization of the use of resources.

This study seeks to contribute to the need to build a portrait of the current use of HB-HTA in Brazil, examining experiences of HB-HTA and focusing on their integration into the national and/or regional system responsible for the adoption of new technologies in the SUS and the main challenges they face.

Methods

In March 2018, a "Health Technology Assessment" workshop was held during the International Seminar on Quality and Patient Safety (Qualihosp 2018), at the *Fundação Getúlio Vargas Foundation (FGV)*, in São Paulo. A panel of experts was invited to meet and present their experience, followed by discussion, a preliminary consensus, audience contributions, a plenary session, and the elaboration of a final consensus on the main aspects of HB-HTA in Brazil.

The panelists were selected based on their experience with HTA and/or HB-HTA. The nineteen participants came from state and federal HB-HTA bodies, academia, and nonprofit organizations. The selection included representatives from four sectors: (i) Health services and NATS, (ii) Academia, (iii) Secretary of State for Health, and (iv) the Federal SUS sector.

In preparation of the event, a rapid review of the literature identified potential topics for discussion, which were translated into questions to guide the discussion. Panelists were invited to participate by a personalized email, followed by a phone call to ensure their understanding of the questions. The PowerPoint template for presentation was sent by email 15 days in advance of the event. Participants were invited to give a 10-min presentation on their individual experiences with HB-HTA, based on the following questions:

- (1) From your perspective, how do hospitals fit into the regulatory system for the adoption of new technologies into the SUS? Highlight, discuss, and give examples of the different strategies in which you participate or participated?
- (2) Given the context you identified, what are the challenges faced and the strategies that need to be developed by hospitals to optimize their resources for HTA activities?

After the identification of the potential topics to guide the discussion, a series of presentations from the perspectives of the four different stakeholder groups took place, each followed by

discussion and a preliminary consensus in relation to the individual presentations. Following the presentations of the four groups, there was a final plenary session.

A report on the workshop was then prepared and forwarded to the panelists for their comments and suggestions. This article was developed considering three themes highlighted during the presentations and debates that took place. The first related to the bodies responsible for HB-HTA, especially the NATS. The second focused on the regulatory system for the adoption of new technologies in the SUS, and the third related to the challenges that exist in respect of the institutionalization of HB-HTA.

Results

Participants' Characteristics

In total, nineteen participants took part in the panel of experts. Panelists were nineteen HB-HTA experts (nine physicians, five pharmacists, one nurse, one nutritionist, one dentist, one economist, and one social worker) representing nine health services and NATS, nine academic institutions, the Secretary of State for Health, and the Federal SUS sector. Most participants (13/19) were female. The majority had 5 or more years of experience in HTA (13/19), and one third (6/19) had more than 10 years of experience in HTA. Two pharmaceutical/product industries representatives were allowed to participate in the discussions and plenary sessions, although they did not make an individual presentation. We did not involve patient representatives, because currently they are not formally involved in HB-HTA activities in Brazil.

Bodies Responsible for HB-HTA

There is a great deal of variety in the bodies responsible for HB-HTA in terms of their *origin, organization, performance, and sustainability*.

In respect of their *origin*, it was possible to identify distinct forms of organization. The oldest bodies involved in decision making on the adoption of technologies were traditional hospital committees, mainly those related to drugs, which remain active in their specific responsibilities. Hospital committees that participate in the decision-making process in respect of HTA are varied and include: pharmacy and therapeutics committees, nutrology and parenteral nutrition committees, clinical pathology and laboratory committees, clinical engineering services committees, and medical products and equipment committees.

In some places, hospital commissions were transformed into NATS, and in others they continue to operate and work closely with them. For example, in one of the hospitals present at the workshop, the NATS have a close relationship with the different hospital commissions, promoting integration between them and sharing physical infrastructure, computational resources, and human resources.

With regard to *structure and organization*, the HB-HTA bodies are equally varied. They comprise multiprofessional teams whose composition may include, among other professionals, physicians, pharmacists, nurses, dentists, nutritionists, methodologists, librarians, statisticians, and system analysts.

In the workshop, some weaknesses were identified in the structure and organization of these bodies. Some of them reported working in suboptimal conditions in terms of physical infrastructure, in small rooms with insufficient computational resources

(equipment, software, and access to databases for the identification and recovery of scientific evidence). With regard to human resources, the teams frequently have an insufficient number of professionals and rely on part-time staff with a lack of relevant qualifications and a lack of job stability, often with short-term contracts. External financing is predominant, with little financial resources being allocated by the institutions themselves.

The weaknesses in the structure and organization of NATS and committees, the lack of a formal position in the hospitals' organization, and their limited participation in institutional decision making probably reflect insufficient institutionalization and compromise their stability and the effectiveness of their work.

The work of the bodies responsible for HB-HTA proved to be varied and heterogeneous. Some of these bodies focus primarily on supporting the institutions' internal decision making, seeking to establish processes and flows for introducing technologies in the hospital context, reviewing clinical guidelines, as well as assessing the adoption of health technologies requested by their professionals and supporting studies by the hospital staff. Others focus on collaborative actions external to their hospital, prioritizing providing support to public bodies such as the ANS, ANVISA, CONITEC, and state and municipal health departments.

A lack of collaboration between the HTA bodies, and between them and the professionals who work in clinical practice and hospital management was highlighted, as was the still incipient nature of the methods of sharing information and experiences.

The main role of these HTA bodies in hospitals is still limited to the actual introduction, rather than monitoring and evaluating the performance of the adopted technologies so that any further use or investment in the technology can be rapidly discontinued when the results are below those expected.

The panelists pointed out the difficulties in conducting economic evaluation studies and also in converting the assessments carried out in the hospital into reports required by the CONITEC, because HTA bodies in hospitals do not have a trained staff with sufficient time for conducting effective HTA. Besides this, they are not aware of the rigorous and complex methods required to produce the "full HTA reports" with economic evaluation, a mandatory request from the CONITEC.

With regard to *sustainability*, the weakness in the financing of the HB-HTA bodies was identified as a factor that compromises the continuity of their activities. In general, there is no regular source of specific funding for these bodies. Some benefit from funds from the MoH and development agencies. An important source of external financing is the *Programa de Apoio ao Desenvolvimento Institucional do SUS (PROADI-SUS)* (the SUS Institutional Development Support Program), financed with tax-exempt resources in philanthropic hospitals of excellence, for projects of interest to the MoH.

Regulation of the Adoption of Health Technologies

The regulatory process (for both drugs and devices) occurs in two stages. The first one is conducted by the ANVISA (the National Agency for Sanitary Surveillance) that ensures the safety and efficacy of drugs and safety and performance of devices and establishes registration before they enter the Brazilian market. Market approval does not determine public funding and pricing. Therefore, the second stage is conducted by the CONITEC and it evaluates if the new technology should be in the reimbursement list and made available free of charge for the whole population in

the SUS. The adoption of health technologies can take place regionally—in the state/municipal health secretariats—and also at the local level—in hospitals—when financed by regional or local resources.

HB-HTA units could play a central role during the five first years of the adoption of new technologies. They could carry out studies along the technology life cycle, not only clinical trials to evaluate the efficacy of the new technologies to support their introduction, but also postregulatory authorization studies to monitor and evaluate the technology uptake and adoption after its implementation in the healthcare system. These units could also generate information in the medium and long term on the safety of new technologies, taking into account real-world practice and variations in patient populations.

The panelists drew attention to the highly specialized clinical staff in quaternary/tertiary hospitals, who are responsible for a large part of the demand for the adoption of, often uncritical, technologies in hospitals. Many empirical studies identified the physician-induced demand (18). Health professionals want to use technologies related to their practice, even if these are not adopted in the hospital or SUS, and the demand of the clinical staff is sometimes related to pressure from the market and from industry. Examples were cited, such as the “Asco” effect (ASCO annual meeting—the American Society of Clinical Oncology—internationally recognized by doctors and oncology professionals involved in the care of people with cancer), with an increase in the demand for specific cancer drugs after participation in this meeting or other scientific events.

Some HB-HTA bodies act in the generation/synthesis of evidence as part of the process of adopting drugs by the CONITEC, mediated by the interest of the local clinical staff or litigations, which force the SUS to deliver technologies not yet introduced into the hospital. On the other hand, the institutional strategy for innovation and adoption in highly specialized hospitals is often associated with a strong market position. And participants reported that some technologies, especially the most complex and costly, are adopted through administrative/political decisions, without the participation of HTA bodies.

At the regional and national levels, the main external activity mentioned by the HTA bodies attending the workshop was that of collaboration with health departments and with the MoH with regard to recommendations for adoption, especially in respect of the preparation of technical-scientific reports, and updating and producing clinical protocols and therapeutic guidelines for the CONITEC. Some reported conducting systematic reviews with direct and indirect meta-analysis and economic evaluations—the latter being considered difficult to carry out.

One NATS reported collaborating with the CONITEC in the horizon scanning process, monitoring new and emerging technologies, and performing a systematic analysis of potential threats, opportunities, and probable developments of these new technologies.

Challenges to the Institutionalization of HB-HTA

“Institutionalization” refers to the action or process of routinizing a concept as a belief, norm, particular value, or mode of behavior in an organization, social system, or society. Thus, institutionalizing HTA is not just about creating an HTA center, but also involves promoting the development of appropriate structures and processes for the systematic evaluation of health technologies

that can be used to inform policy and practice at different levels (19).

According to the participants, the institutionalization of HB-HTA has faced several challenges. The first is the creation of a qualified team dedicated exclusively to HTA activities, as well as guaranteeing the provision of financial resources to ensure the best performance and sustainability. Without a proper personnel recruitment, retention, and development policy, long-term planning of activities becomes impossible.

The second challenge has been making the evaluation bodies a part of the managerial and institutional decision-making process, so that they have legitimacy and are able to communicate with both management and professionals. In order to increase the impact of hospital HTA at the local level and participation in decision making, it is necessary to avoid the managerial “bypass” of the internal evaluation committee and to reduce the inclusion of emerging technologies in response to the pressure exerted by the market.

The third challenge has been to raise awareness in and train the internal audience (clinical staff and managers) to use the evidence and engage them in the evaluation process so that they have quality information, independent of the health technology industry, so that they can be actors in the regulation of technologies that require adoption, strengthening HTA culture in the hospital and in potential regional collaborative networks.

The fourth challenge is related to the strengthening of the links between the HB-HTA bodies, creating local and regional networks, strengthening national HTA networks, with the definition of goals for each NATS, in order to optimize the use of resources and promote collaborative efforts, thereby obtaining the best results.

Discussion

Over the last 15 years, many hospitals around the world have established HTA units with a diversity of organizational models in terms of structure, professional capacity, types of leadership, level of formalization of processes, and specialization of work (20). Our study aimed to contribute to the existing literature, providing a current picture of HB-HTA in Brazil. Although the workshop was carried out in 2018, the challenges identified remain important and current.

Ten years after the creation of NATS, the institutionalization of technology assessment in the hospital context is still not a reality at the national level. Although there are some successful experiences, coming from centers and professionals at the forefront of the implementation of HB-HTA, it is not yet a policy implemented by hospital management, and still has little recognition and institutionalization (10).

The variety of structures and forms of organization of the HB-HTA bodies presented indicate the wide variety of solutions available to implement HTA in hospitals. This variability makes it difficult to apply the internationally adopted classification of models (ambassador model, mini-HTA, internal committee, and HTA unit) to local models (20). Using the contingency model for HB-HTA, the majority of local experiences presented came close to the “independent group unit”. This structure is the first stage in the development of an HB-HTA unit. They are “pioneers”, acting voluntarily, on part-time dedication to HTA without job stability. These groups support the hospitals’ internal decision making in contexts that lack formal cooperation with national or regional HTA bodies. Some of them can be

categorized as “integrated-essential HB-HTA units”, with a limited number of internal collaborators, but they are able to collaborate with universities and research centers, which can provide workforce to carry on HTA processes. None of the groups represented present themselves as an “integrated specialized HTA unit”, a mature formal organizational structure with specialized HTA personnel, working full time in the production of HTA studies. These units are embedded in a context with national/regional HTA bodies (20).

The relative novelty of these bodies may explain, at least in part, their informality and lack of institutional recognition, as well as the allocation of part-time human resources. None of them present an explicit mission statement, linked to the hospitals’ mission statement and its strategic planning, which is strongly recommended in the good practice in relation to HB-HTA (21). Their absence in the institutional organization chart indicates a lack of definition about how they should work with other departments, and whether the consultation should be mandatory or voluntary. These weaknesses reflect the lack of importance given by many managers and health professionals to these bodies.

The priority given by some HB-HTA bodies to generating information for decision makers outside the hospitals may be related to the lack of regular financing, with a search for resources through short-term grants and temporary arrangements (15). The production of information that serves as a basis for the requests for adoption of new technologies to the CONITEC and in response to legal judgments deserves attention. Demands triggered by legal rulings are increasing; in the early 2000s, university hospitals in the state of Rio de Janeiro were responsible for 36% of lawsuits (22). In São Paulo, in 2010, health-related lawsuits originated mainly from private clinics (37%) and hospitals (23%) (23), maintaining a similar percentage until 2015, when 60% of the demands came from doctors in the private health system (24). It is not clear how much these legal demands put pressure on the adoption of drugs by the CONITEC. In Rio Grande do Norte, four of the ten most demanded drugs between 2013 and 2017 were later adopted by the CONITEC (25), suggesting an association between the demands and the adoption. Souza et al. (26), on the other hand, found no direct relationship between lawsuits for biological drugs and their adoption by the CONITEC. The HB-HTA bodies are mostly located in teaching hospitals (10), the locus of the use of new technologies, and there is a need to identify the possible influence of the information produced by these bodies on the subsequent recommendations of the CONITEC.

Only one regional network, *Rede Paulista de Avaliação de Tecnologias em Saúde (REPATS)*, was mentioned in the presentations. The absence of well-established regional HTA bodies, which function as hubs for HTA networks, may have favored the establishment of autonomous units. The maturity of these bodies may increase the formalization of processes and alignment with the strategic plans of hospitals, as well as the establishment of collaborative regional networks in the country. Internationally, a growing demand for HB-HTA to share reports has been reported (27).

The initial spread of HB-HTA culture observed had little impact on the local decision-making process. NATS remain underutilized, having little impact on clinical practice and decision making in hospital management (28). There are regional disparities in workload, production, and training between units (15). There seems to be no alignment between their core objectives and the support they receive at the institutional level. There is no

standardization of the type of work performed, nor are there standardized performance indicators, and many NATS do not even have tools to measure their results (e.g., which and how many studies were performed and what their impacts are for the hospital or health system) (14).

A similar situation has been reported in other low- and middle-income countries, where the regulatory structure of HB-HTA is still fragile and the changes proposed through HTA have encountered resistance from various actors in the health system (29), and has even been reported in developed countries like Finland (30).

On the other hand, the activities of the HB-HTA bodies have been shown to be feasible and can impact local decision-making processes but are limited by several specific contextual factors (political will and leadership, training in HTA-related disciplines, financing, technical expertise, and availability of databases) related to the HTA model (composition, independence, and procedures) or to the committee responsible for the decision (composition, dedicated time, resources, perceptions, priorities, and processes) (19;31).

There are reports of successful experiences in the USA, Canada, Argentina, and Kazakhstan (32;33). The hospital “HTA unit” model, with its relative independence from the hospital’s clinical and administrative staff, has been identified as the best structure—its implementation cost being offset by the savings generated by the cancellation of acquisitions of ineffective technologies and by the efficiency gains from the appropriate allocation of resources in different areas of the hospital (33).

The information produced by HB-HTA is considered superior to the information provided by national or regional HTA agencies because it is delivered more quickly and is more appropriate, being adapted to the hospital environment and the needs of hospital managers (1).

However, the ability to assess the real impacts of the HB-HTA bodies on decision-making processes and costs was identified as being limited due to the small number of evaluations using quantitative data, the lack of clear comparators, and the fact that most evaluations were conducted by actors involved in HTA, therefore being subject to the bias introduced by these internal evaluators (34). An analysis of the performance and impact of HB-HTA units has generally been made by the leaders of these units and has not been systematic (20). Some suggested ways of measuring the short-term impact are assessing the use of the recommendation reports by decision makers and adherence to the recommendations made in the reports (21).

This study has some limitations; the small number of bodies represented prevents the generalization of the findings. However, the bodies discussed, although representing only the southeastern and southern regions of Brazil, are recognized as the most established and active units nationally. They have given us a unique opportunity to build a picture of the active units. Additional research is needed to broaden the understanding of the national situation.

Conclusion

HB-HTA is not institutionalized in Brazil and has, therefore, not become a part of the system regulating the adoption of new technologies in the SUS. The main challenges identified are related to difficulties in the formation of qualified staff teams, ensuring financial support and sustainability. The HB-HTA bodies, in general, work in conditions below those that would allow them

to lead the HTA process internally in the hospital, consolidate their assessment strategies, establish more robust and lasting partnerships, or evaluate the impact of their actions on the hospitals and the SUS.

Often, the complete HTA process does not take place, with synthesis methods (systematic reviews and meta-analyses) predominating and with few of the economic evaluation studies necessary for the proper adoption of new technologies. Moreover, the use of the adopted technologies is frequently not monitored to assess their impact on patients and the hospital, to generate evidence about their use, and to improve the contribution of the HB-HTA bodies to the evaluation process. Transforming these bodies into hospital “HTA units” would be of great value in terms of the better allocation of resources and in respect of patient safety.

The workshop drew attention to the fact that some HTA units perform important activities directed to other bodies, rather than the hospital where they are located, as their financing often comes from external sources with different demands.

The role of these bodies in respect of the evaluation of new technologies deserves further study, both in relation to the pressure for adoption from the hospital team and from industry professionals and court rulings and in respect of the relationship between the CONITEC and highly specialized teaching hospitals, where the adoption of new technologies tends to originate. Studies that aim to measure the impact of these bodies through evaluating the outcomes related to decision makers following and adhering to the recommendations made in the reports are also important to better characterize HB-HTA.

It is necessary to strengthen HB-HTA culture through the implementation of this policy in hospital management and by making the evaluative bodies a part of the managerial and decision-making process of hospitals. In addition, the development of regional collaborative networks needs to be promoted, as does the establishment of a national HTA network in Brazil.

Funding. No direct funding was received for this study. P.C.d.S. is the recipient of grant from the CNPq (Research Grant No. 302268/2019-7). P.C.d.S. and H.M.D.N. are researchers from the National Institute of Science and Technology for Health Technology Assessment (IATS)—CNPq/Brazil (Research Grant No. 465518/2014-1).

References

1. **Sampietro-Colom L, Lach K, Cicchetti A, Kidholm K, Pasternack I, Fure B, et al.** The AdHopHTA handbook: a handbook of hospital-based Health technology Assessment (HB-HTA). 2015. Available from: http://www.adhophta.eu/sites/files/adhophta/media/adhophta_handbook_website.pdf.
2. **Gagnon MP.** Hospital-based health technology assessment: Developments to date. *Pharmacoeconomics*. 2014;**32**:819–24.
3. **Martin J, Polisen J, Dendukuri N, Rhainds M, Sampietro-Colom L.** Local health technology assessment in Canada: Current state and next steps. *Int J Technol Assess Health Care*. 2016;**32**:175–80.
4. **Cicchetti A, Marchetti M, Dibidino R, Corio M.** Hospital based health technology assessment world-wide survey. Hospital based health technology assessment sub-interest group. 2016 [cited 2020 Oct 23]. Available from: <https://htai.org/wp-content/uploads/2018/02/HospitalBasedHTAISGSurveyReport>.
5. **Pfadenhauer LM, Gerhardus A, Mozygemba K, Lysdahl KB, Booth A, Hofmann B, et al.** Making sense of complexity in context and implementation: The context and implementation of Complex interventions (CICI) framework. *Implement Sci*. 2017;**12**:21.
6. **Nilsen P.** Making sense of implementation theories, models and frameworks. *Implement Sci*. 2015;**10**:53.
7. **Dopp AR, Munday P, Beasley IO, Silovsky JF, Eisenberg D.** Mixed-method approaches to strengthen economic evaluations in implementation research. *Implement Sci*. 2019;**14**:2.
8. **Paim J, Travassos C, Almeida C, Bahia L, Macinko J.** The Brazilian health system: History, advances, and challenges. *Lancet*. 2011;**377**:1778–97.
9. **World Health Organization.** *Global health expenditure database. Country profiles. Health expenditure profile. Brazil*. [cited 2021 July 27]. Available from: https://apps.who.int/nha/database/country_profile/Index/en.
10. **Novaes H, De Soarez P.** A Avaliação das Tecnologias em Saúde: origem, desenvolvimento e desafios atuais. *Panorama internacional e Brasil. Cad Saude Pública*. 2020;**36**:e00006820.
11. **Brasil.** Ministério da Saúde. Decreto nº 7.646, de 21 de dezembro de 2011. Regulamenta a Lei nº 12.401, de 28 de abril de 2011 e Dispõe sobre a Comissão Nacional de Incorporação de Tecnologias no Sistema Único de Saúde e sobre o processo administrativo para incorporação, exclusão e alteração de tecnologias em saúde pelo Sistema Único de Saúde - SUS. 2011 [cited 2021 May 28]. Available from: http://www.planalto.gov.br/CCIVIL_03/_Ato2011-2014/2011/Decreto/D7646.htm.
12. **Brasil [Internet].** Ministério da Saúde. *Secretaria de Atenção à Saúde. Protocolos Clínicos e Diretrizes Terapêuticas em Oncologia. Carcinoma de Pulmão*. Brasília: Ministério da Saúde; 2014. pp. 171–82 [cited 2021 May 28]. Available from: http://bvsms.saude.gov.br/bvs/publicacoes/protocolos_clinicos_diretrizes_terapeuticas_v3.pdf.
13. **Comissão Nacional de Incorporação de Tecnologias no Sistema Único de Saúde.** Conitec em números: Painel de acompanhamento de tecnologias em saúde submetidas à Conitec no Sistema Único de Saúde. [cited 2021 July 27]. Available from: <https://datastudio.google.com/embed/reporting/ed1f017c-58e0-4177-aeb2-61f59d50b183/page/PzCbB>.
14. **Francisco FR, Malik AM.** Application of health technology assessment (HTA) in the decision-making in hospitals. *J Bras Econ Saude*. 2019;**11**:10–7.
15. **Pereira CCA, Rabello RDS, Elias FTS.** Hospital-based health technology assessment in Brazil: An overview of the initial experiences. *Int J Technol Assess Health Care*. 2017;**33**:227–31.
16. **Departamento de Ciência e Tecnologia, Secretaria de Ciência, Tecnologia e Insumos Estratégicos, Ministério da Saúde.** Consolidation of health technology assessment in Brazil. *Rev Saude Pública*. 2010;**44**:381–3.
17. **Nunes AA, de Mello LM, Ana LW, Marques PM, Dallora ME, Martinez EZ, et al.** [Evaluation and incorporation of health technologies: Process and methodology adopted by a high-complexity care university]. *Cad Saude Publica*. 2013;**29**:S179–86.
18. **Mohammadshahi M, Yazdani S, Olyaeemanesh A, Sari AA, Yaseri M, Sefiddashti SE.** A scoping review of components of physician-induced demand for designing a conceptual framework. *J Prev Med Public Health*. 2019;**52**:72–81.
19. **Leelahavarong P, Dounghipsirikul S, Kumluang S, Poonchai A, Kittiratchakool N, Chinnacom D, et al.** Health technology assessment in Thailand: Institutionalization and contribution to healthcare decision making: Review of literature. *Int J Technol Assess Health Care*. 2019;**35**:467–73.
20. **Cicchetti A, Iacopino V, Coretti S, Fiore A, Marchetti M, Sampietro-Colom L, et al.** Toward a contingency model for hospital-based health technology assessment: Evidence from Adhophta project. *Int J Technol Assess Health Care*. 2018;**34**:205–11.
21. **Sampietro-Colom L, Lach K, Pasternack I, Wasserfallen JB, Cicchetti A, Marchetti M, et al.** Guiding principles for good practices in hospital-based health technology assessment units. *Int J Technol Assess Health Care*. 2015;**31**:457–65.
22. **Messeder AM, Osorio-de-Castro CG, Luiza VL.** [Can court injunctions guarantee access to medicines in the public sector? The experience in the State of Rio de Janeiro, Brazil]. *Cad Saude Publica*. 2005;**21**:525–34.
23. **Filho MN, Chieffi AL, Correa MCMMA.** S-Codes: A new system of information on lawsuits of the state department of health of São Paulo. *Bepa*. 2010;**7**:18–30.
24. **Pierro B.** Demandas crescentes. *Pesquisa FAPESP*. 2017: 18–25.
25. **Oliveira YMC.** *Análise das demandas judiciais por medicamentos no estado do Rio Grande do Norte*. Natal, RN: Federal do Rio Grande do Norte; 2020.

26. **Souza KAO, Souza LEPP, Lisboa ES.** Ações judiciais e incorporação de medicamentos ao SUS: A atuação da Conitec. *Saúde em Debate.* 2018;**42**:837–48.
27. **Verbeek J, Hiligsmann M, Cicchetti A, Marchetti M.** Sharing and collecting hospital-based health technology assessment reports internationally: Is an extensive participation of stakeholders realistic? *Int J Technol Assess Health Care.* 2018;**34**:527–34.
28. **Elias FTS, Leão LS, Assis EC.** Avaliação de tecnologias em hospitais de ensino: desafios atuais. *Tempus Actas de Saúde Coletiva.* 2015;**9**:147–58.
29. **Attieh R, Gagnon MP.** Implementation of local/hospital-based health technology assessment initiatives in low- and middle-income countries. *Int J Technol Assess Health Care.* 2012;**28**:445–51.
30. **Halmesmäki E, Pasternack I, Roine R.** Hospital-based health technology assessment (HTA) in Finland: A case study on collaboration between hospitals and the national HTA unit. *Health Res Policy Syst.* 2016;**14**:25.
31. **Poder TG, Bellemare CA, Bédard SK, Fiset JF, Dagenais P.** Impact of health technology assessment reports on hospital decision makers — 10-year insight from a hospital unit in Sherbrooke, Canada: Impact of health technology assessment on hospital decisions. *Int J Technol Assess Health Care.* 2018;**34**:393–9.
32. **Demirdjian G.** A 10-year hospital-based health technology assessment program in a public hospital in Argentina. *Int J Technol Assess Health Care.* 2015;**31**:103–10.
33. **Avdeyev A, Tabarov A, Akhetov A, Shanazarov N, Hailey D, Kaptagayeva A, et al.** Hospital-based health technology assessment in Kazakhstan: 3 years' experience of one unit. *Int J Technol Assess Health Care.* 2019;**35**:436–40.
34. **Gagnon MP, Desmartis M, Poder T, Witteman W.** Effects and repercussions of local/hospital-based health technology assessment (HTA): A systematic review. *Syst Rev.* 2014;**3**:129.