# Needs assessment and gap analysis for national health technology assessments in Lebanon

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## Abstract

**Background:** Developing countries are increasingly adopting health technology assessment as a critical tool for evaluating and addressing challenges related to the use of health technologies in support of Universal Health Coverage, health equity and resource allocation.

**Aim:** To map health technology assessment resources and identify barriers to national health technology assessments in Lebanon.

**Methods:** Using a questionnaire survey and focus group discussions, we collected data from key informants who had interest in health technology assessment in Lebanon between May and July 2017 and in July 2018. We analysed the quantitative data descriptively using Microsoft Excel and the qualitative data using NVivo version 12.

**Results:** Twenty participants completed the questionnaire and 34 attended the focus group discussions. Participants mentioned reimbursement for the use of health technologies and production of clinical guidelines as top priorities for health technology assessment and mentioned the lack of collaboration nationally and lack of agreement among relevant stakeholders as the topmost barriers to assessments. They mentioned safety and effectiveness as the main parameters to be considered in assessments, followed by quality-of-life and burden of illness.

**Conclusion:** Findings from this study support the need for health technology assessments in Lebanon, beginning with the creation of a national autonomous multidisciplinary entity that will facilitate synergy and consensus-building for the assessments.

Keywords: health technology assessment, health equity, resource allocation, Lebanon

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## Background

Governments have experienced exponential growths in the introduction of health technologies, including new medicines, diagnostic tools and medical devices. However, with the advancements there have been unprecedented challenges for healthcare authorities as they struggle to make optimal coverage and budgetary decisions for patients. Health technology assessment (HTA) has been recognized as a critical tool for addressing these challenges *(1)*. HTA is a multidisciplinary research process that evaluates the social, economic, organizational, and ethical components of a health intervention or health technologies, to provide evidence for decision-making on equity, efficiency and resource allocation *(1)*.

There has been an expansion of HTA across many healthcare systems in Europe, North America, and Australia in the last few decades, and developing countries are increasingly adopting HTA to support Universal Health Coverage (UHC) *(4)*. However, adoption and diffusion of HTA, scope of activities, funding, as well as the role of stakeholders and their levels of involvement may differ depending on the nature of the local healthcare system *(2,3)*.

This study was conducted in response to the World Health Assembly Resolution 67.23 “Health intervention and technology assessment in support of UHC” and the call by WHO to assess the status of HTA globally *(5)*. It aimed to assess the situation of HTA in Lebanon and provide information for the Ministry of Public Health (MOPH) on the best strategy to adopt in introducing HTA at the national level. The WHO Lebanon Country Office commissioned the Higher Institute of Public Health (ISSP) of Saint-Joseph University (USJ) to conduct the study, in coordination with MOPH.

## Methods

Using convenient sampling, we identified key informants who had interest in HTA, representing private hospitals, HTA coverage funds including MOPH, pharmaceutical companies, academics, and physicians. We developed and administered a survey questionnaire by e-mail to 88 participants in this group. The questionnaire was developed for the purpose of our study, inspired by the global survey performed by WHO in 2015, and based on questionnaires used

for a similar purpose in other countries *(6)*. The questionnaire had 34 open- (qualitative) and close-ended (quantitative) questions, grouped into 5 sections, covering understanding of HTA concept, institutionalizing national HTA (governance, stakeholders, policy areas), implementation of HTA (priority-setting, study design, barriers), willingness of the participant to contribute to HTA, and their current activities related to HTA.

Quantitative data was collected between May and July 2017 and the focus group discussions were then held in July 2018 in Beirut to share, discuss and validate key themes from the survey. The discussions were held in a full day session where participants were organized into 8 homogenous groups.

### *Data analysis*

The survey data was analysed descriptively in Microsoft Excel and data from the focus group discussions were analysed using NVivo version 12. One researcher coded the data for key concepts (HTA motives, policy areas, evaluation dimensions in assessment, barriers, facilitators, and willingness to participate) reflected in the survey questionnaire and a second researcher validated the codes. A coding matrix created in NVivo was used to organize the codes and label the subcodes. A thematic content analysis was then conducted. Recurring themes and subthemes were identified and relevant codes were grouped. The study team discussed the analysis and interpreted the results. The study results were reviewed and discussed by all authors to reach consensus.

### *Ethics considerations*

The WHO Lebanon Country Office approved the study methodology. Participation in the study was voluntary. All responses to the questionnaire were secured and data was accessible only to the researchers working on the study. Each centre was given an identification code and each participant was given a sequential number to ensure confidentiality.

## Results

### *Study participants*

Twenty of the 88 recipients (22.7%) completed the questionnaire (Figure 1). The remaining 68 (77.3%) declined to participate due to lack of time and/or lack of interest in the subject and/or lack of information in this regard. Thirty-four participants (38.6%) attended the focus group discussion, where they contributed as groups, mostly organized by institution (Figure 2). Thirty percent of those who attended the focus group discussions also responded to the survey questionnaire.

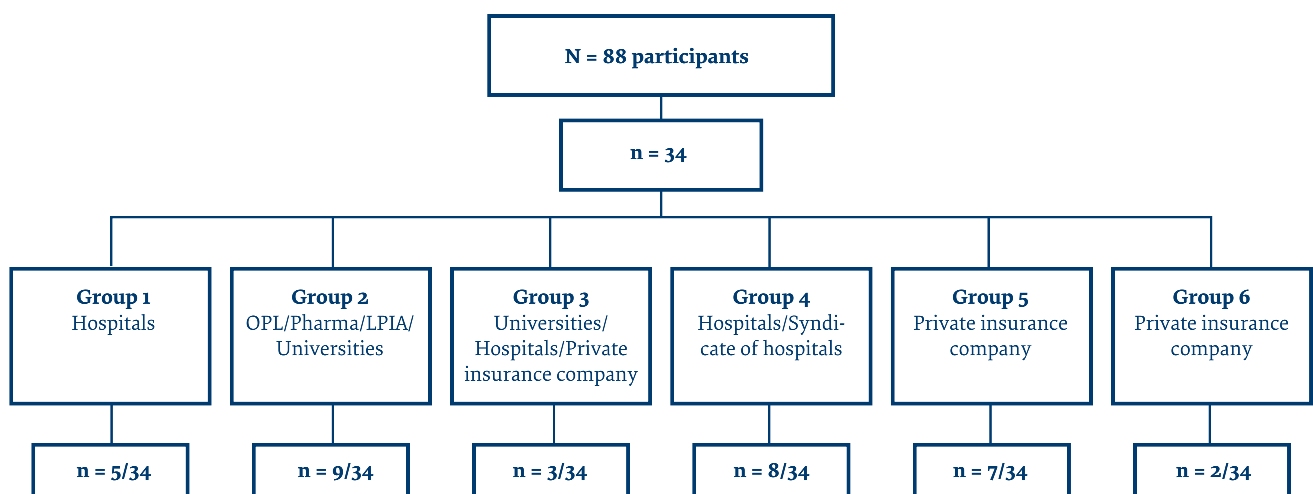
### *Health policy areas and technologies for assessment*

Many (25.0%) of the survey respondents ranked coverage or reimbursement for individual use of health technologies and production of clinical guidelines as top priorities for HTA, followed by health services delivery design and provider payment reform (20.0%) (Table 1). Similarly, most of the focus group discussion participants mentioned pricing and reimbursement of health technologies and development of clinical guidelines or disease management pathways as top priorities for HTA. Other important policy areas mentioned were health services delivery design and registration of health technologies.

### *Barriers and facilitators of HTA*

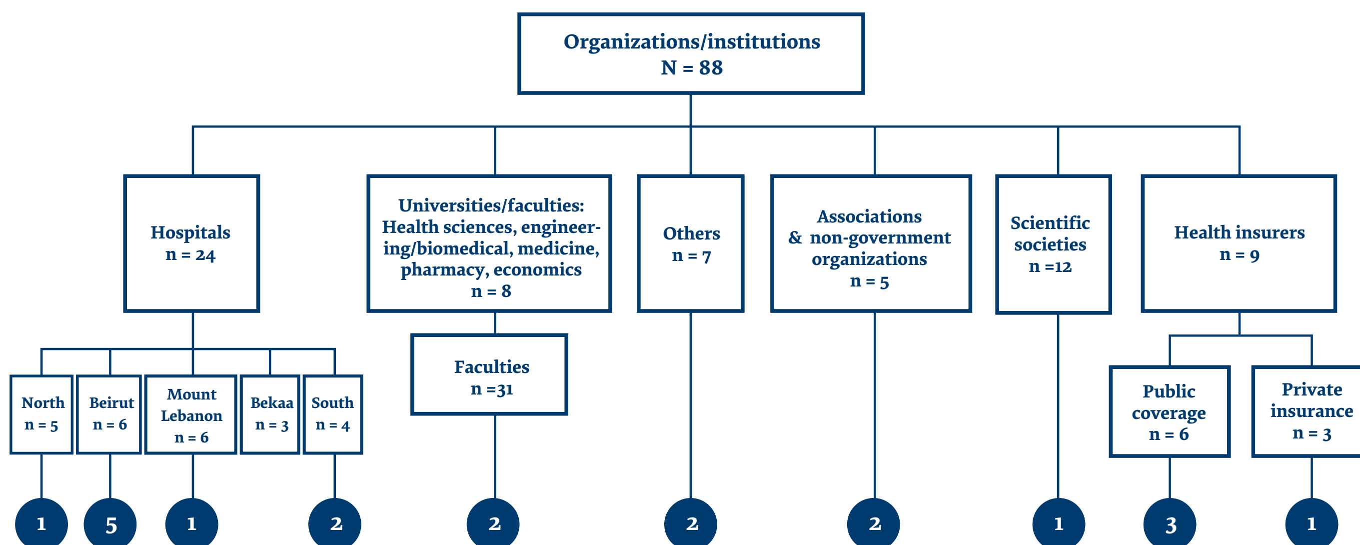
The most important barriers to HTA implementation at the national level mentioned by the survey and

**Figure 1. Participants in the focus group discussions**




*OPL= Order of Pharmacy in Lebanon; LPIA = Lebanese Pharmaceutical Importers Association*

Figure 2. **Survey participants**




*OPL= Order of Pharmacy in Lebanon; LPIA = Lebanese Pharmaceutical Importers Association*

Table 1. **Live renal transplant services in Punjab Province, Pakistan, 2014–2023**

| | Number of respondents | |
|---|---|---|
| | Survey (N = 20) | Focus group discussion (N = 34) |
| ***Health policy areas*** | | |
| Coverage, pricing or reimbursement of individual health technologies | 5 | 29 |
| Production of clinical guidelines or disease management pathways | 5 | 32 |
| Health services delivery design | 4 | 23 |
| Provider payment reform or pay for performance schemes | 4 | N/A |
| Informing the decision to design basic package of health benefits | 3 | N/A |
| Registration of health technologies | N/A | 17 |
| ***Barriers for HTA implementation*** | | |
| Lack of national collaboration and agreement between stakeholders | 13 | 25 |
| Organizational/institutional bureaucracy | 11 | N/A |
| Scarcity of funds | 11 | 14 |
| Lack of local databases | 9 | 22 |
| Scarcity of human resources and qualified expertise | 8 | 14 |

*N/A = not applicable*

focus group discussion participants were the lack of national collaboration and agreement among relevant stakeholders. Other common barriers mentioned were institutional bureaucracy and scarcity of financial resources. Sixty-five percent of the focus group discussion participants believed that non-availability of a local database was a potential barrier to HTA implementation. One participant said:

> *"No database, no collaboration between stakeholders and no political interest (in HTA)."*

All survey respondents considered the availability of motivated and skilled human resources as key to facilitating local institutionalization of HTA. They said the active collaboration of a multidisciplinary network of actors at the national level and coordination of efforts can provide a conducive environment for HTA institutionalization. In contrast to the survey findings, focus group discussion participants believed that the primary facilitator is access to international HTA

networks. Government support was listed second, and agreement between stakeholders was third.

The survey and focus group discussion participants expressed their willingness to engage in the HTA process and its activities within the scope of their responsibilities. One participant said:

> *"We will be glad to participate in HTA startup and as partners to initiate this institution."*

### *Dimensions for HTA study and path towards institutionalisation*

The survey and focus group discussion participants ranked the parameters for priority-setting in order of importance and relevance to the Lebanese context from a comprehensive list. All participants agreed on safety and effectiveness as the main parameters to be considered, followed by quality-of-life and burden of illness. They agreed that an HTA unit should be established in the form of a national multidisciplinary committee under the umbrella of the MOPH or as an independent agency in a government institution, within a mandatory framework. Institutionalization, according to the participants, should leverage a network of actors with common objective on resource allocation and mutual efforts between stakeholders. They said that the HTA committee needs strong government commitment and support, yet remain autonomous and protected from political pressures.

> *"[HTA] should not be influenced by the minister, and its decisions should be applied to all stakeholders."*

## Discussion

This study is aligned with WHO's initiative to develop national capacity for evidence-informed policymaking and highlights a roadmap for the development of HTA unit in Lebanon *(7,8)*. The institutional arrangement for HTA must be carefully considered in the context of the Lebanese healthcare system, which is characterized by fragmentation at the level of financing and service delivery *(9,10)*. Having a functional unit will depend on the extent to which such a unit will be inclusive and independent. At the global level, Latin America countries, Malaysia and Hungary have established multidisciplinary HTA committees, suggesting that in countries with limited HTA experience a centralized agency may offer advantages over a network of national agencies *(11-13)*.

The health policy areas that must be addressed by HTA, according to our respondents, are pricing and reimbursement of health technologies, production of clinical guidelines, and health services designs. These findings echo what has been reported in HTA situation analyses conducted in other resource-limited settings such as India and Nigeria *(14,15)*. In Lebanon, the lack of practice guidelines and clinical management pathways is particularly problematic *(9)*. Establishing synergy between HTA and clinical pathways can help bridge the existing gap between research and practice while offering a cost-effective approach to healthcare providers.

Important barriers that must be overcome before implementing HTA at the national level are lack of local databases, scarcity of funds for HTA and shortage of qualified human resources. Policymakers in Lebanon need to prioritize the development of local skills through targeted capacity building and capitalize on international HTA networks to develop human resources. This should include building technical capacity to transfer and adapt existing knowledge from international studies, avoiding duplication and resource wastage.

Our study was limited by the small number of participants, which may have affected the validity and generalizability of the findings. A large number of the participants represented hospitals, while payers were less represented. Phase 2 of the study allowed mitigation of the low response rate and ensured a wider representation of key HTA players in Lebanon.

## Conclusion

There is a need for HTA in Lebanon as a health policy tool, to ensure transparency and legitimacy of decision-making and improve the efficiency, safety and quality of healthcare. A roadmap starts with creating a national, autonomous, multidisciplinary HTA committee under the umbrella of the MOPH, which should later progress to an independent agency sponsored by the ministry. Future endeavours should prioritize the formation of a taskforce that will demonstrate the value of HTA to all stakeholders and set priorities for pilot projects that align with the MOPH strategy. Barriers to HTA institutionalization can be mitigated through capacity building, data infrastructure and facilitating communication and collaboration between stakeholders.

**Conflicting of interest:** None declared.

**Funding:** None.

## Détermination des besoins et analyse des lacunes pour les évaluations nationales des technologies de la santé au Liban

### Résumé

**Contexte :** Les pays en développement adoptent de plus en plus l'évaluation des technologies de la santé comme outil essentiel pour examiner et relever les défis liés à l'utilisation de ces technologies en vue de mettre en place la couverture sanitaire universelle, de favoriser l'équité en santé et d'optimiser l'allocation des ressources.

**Objectifs :** Cartographier les ressources en matière d'évaluation des technologies de la santé et identifier les obstacles qui entravent la réalisation de ces évaluations à l'échelle nationale au Liban.

**Méthodes :** À l'aide d'une enquête par questionnaire et de groupes de discussion thématiques, nous avons recueilli des données auprès d'informateurs clés ayant un intérêt pour l'évaluation des technologies de la santé au Liban entre mai et juillet 2017 et en juillet 2018. Nous avons analysé les données quantitatives de manière descriptive en utilisant Microsoft Excel et les données qualitatives à l'aide du logiciel NVivo version 12.

**Résultats :** Vingt participants ont rempli le questionnaire et 34 ont assisté aux groupes de discussion thématiques. Les participants ont indiqué que le remboursement des frais liés à l'utilisation des technologies de santé et la production de lignes directrices cliniques étaient des priorités absolues pour l'évaluation de ces technologies. Ils ont souligné que le manque de collaboration au niveau national et l'absence d'accord entre les parties prenantes concernées constituaient les principaux obstacles aux évaluations. Ils ont déclaré que l'innocuité et l'efficacité étaient les principaux paramètres à prendre en compte dans les évaluations, suivies par la qualité de vie et la charge de morbidité.

**Conclusion :** Les résultats de la présente étude mettent en évidence la nécessité de mener des évaluations des technologies de la santé au Liban, en commençant par la création d'une entité nationale autonome et multidisciplinaire. Cette structure permettra de faciliter la collaboration et de favoriser la recherche de consensus afin de mener à bien ces évaluations.

## تقدير الاحتياجات وتحليل الفجوات في تقديرات التكنولوجيات الصحية الوطنية في لبنان

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### الخلاصة

**الخلفية:** يتزايد اعتماد البلدان النامية لتقدير التكنولوجيات الصحية باعتباره أداة حاسمة لتقييم ومواجهة التحديات المتعلقة باستخدام التكنولوجيات الصحية في دعم التغطية الصحية الشاملة والإنصاف في مجال الصحة وتخصيص الموارد.

**الأهداف:** هدفت هذه الدراسة الى حصر موارد تقدير التكنولوجيات الصحية وتحديد العقبات التي تعترض سبيل إجراء التقييمات الوطنية للتكنولوجيات الصحية في لبنان.

**طرق البحث:** استعنَّا بمسح استبياني ومناقشات مجموعات الاختبار في جمع البيانات من مخبرين رئيسيين مهتمين بتقييم التكنولوجيات الصحية في لبنان في الفترة بين مايو/ أيار ويوليو/ تموز 2017 وفي يوليو/ تموز 2018. وقد حللنا البيانات الكمية على نحو وصفي ببرنامج Microsoft Excel، وأيضًا حللنا البيانات النوعية بالنسخة 12 من برنامج NVivo.

**النتائج:** أكمل عشرون مشاركًا الاستبيان، وحضر 34 مشاركًا مناقشات مجموعات الاختبار. وذكر المشاركون استرداد التكاليف لاستخدام التكنولوجيات الصحية، وكذلك إعداد المبادئ التوجيهية السريرية، بوصفهما أهم أولويتين في تقييم التكنولوجيات الصحية، وذكروا أيضًا قصور التعاون على الصعيد الوطني، وغياب الاتفاق بين أصحاب المصلحة وثيقي الصلة، بوصفهما أهم عائقين أمام إجراء التقييمات. كما ذكروا أن المأمونية والفعالية هما المعيارين الرئيسيين اللذين تجب مراعاتهما في التقييمات، يليهما جودة الحياة وعبء المرض.

**الاستنتاجات:** تدعم نتائج هذه الدراسة الحاجة إلى إجراء تقييمات للتكنولوجيات الصحية في لبنان، تبدأ بإنشاء كيان وطني مستقل متعدد التخصصات من شأنه تسهيل التآزر وبناء التوافق في الآراء لإجراء التقديرات.

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