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L'Unité d'évaluation des technologies et des modes d'intervention en santé (UETMIS) du Centre Universitaire de Santé McGill (CUSM)
Health Technology Assessment Unit (TAU) of the MUHC

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Impact of TAU Recommendations on MUHC Practice: Follow-up of 60 health technologies evaluated from 2001 to 2021

Brief report
Report no. 2021-S1

Report prepared for the Technology Assessment Unit (TAU) of the McGill University Health Centre (MUHC)

by

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Mission Statement

The MUHC Health Technology Assessment Unit (TAU) advises hospital administrators and clinical teams in difficult resource allocation decisions. Using an approach based on independent, critical evaluations of the available scientific evidence and a transparent, fair decision-making process, novel and existing medical equipment, drugs and procedures used by healthcare professionals are prioritized on a continuous basis ensuring the best care for life with the best use of resources.

Declaration of Conflicts of Interest

Members of TAU's research staff and policy committee declare no conflicts of interest.

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KEY FINDINGS AT A GLANCE

In 2021, TAU followed up on 60 health technologies assessed between 2001 and 2021 to determine whether recommendations had translated into practice and whether local data were being collected after implementation.

98.3% **59 of 60 technologies had follow-up status information**	**91.1%** **51 of 56 evaluable recommendations were followed**
56.1% **23 of 41 technologies currently in use had documented data collection**	**82% vs 38%** **Data collection: restricted use vs routine use**

Overall interpretation

- TAU recommendations were generally translated into practice.
- An important gap was systematic post-adoption evaluation: documented data collection was substantially more common when use remained restricted than after routine adoption, making it more difficult to determine whether the technology continues to provide the expected clinical, operational, and economic value.
- **This highlights the need to move from a model in which HTA primarily informs initial adoption decisions towards one in which evidence is generated and used throughout the lifecycle of a technology**.

Best practices for post-HTA follow-up

1 **Plan evaluation at approval**	2 **Follow up on a schedule**	3 **Reassess when triggered**	4 **Maintain a TAU follow-up registry**	5 **Close the evaluation loop**
Define the eligible population, responsible lead, required outcomes/data source, and reassessment date	- Check implementation at 3–6 months; - Review adherence/data at ~12 months, and - Reassess by 18–24 months where appropriate	Revisit earlier for safety signals, major changes in use or cost, new evidence/guidelines, or expansion beyond the approved indication.	Track implementation status, approval conditions, responsible leads, data collection, and next review date.	For Approved for Evaluation technologies, document a final decision: routine approval, continued restricted use, or discontinuation.

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EXECUTIVE SUMMARY

BACKGROUND

The Technology Assessment Unit (TAU) of the McGill University Health Centre (MUHC) conducts hospital-based health technology assessments to inform decisions regarding the adoption, restricted use, or non-adoption of health technologies. It was a self-imposed condition of the creation of TAU in 2001 that there be a regular evaluation of the impact of its recommendations. Therefore, in 2021, TAU conducted a follow-up of previously completed assessments to determine whether recommendations had been implemented and whether local data were being collected following adoption.

OBJECTIVE

1. Assess compliance with TAU recommendations.

2. Assess whether local data were being collected after implementation, particularly for technologies approved for restricted use/evaluation.

METHODS

Sixty technologies evaluated between 2001 and 2021 were included. Clinical teams were contacted to determine the current status of each technology and the availability of local data. Where information could not be obtained directly from clinical teams, supplementary information was sought from the Data Warehouse, medical archives, Finance, Pharmacy, and Infection Control.

Compliance was defined according to whether actual use was consistent with the TAU recommendation: approved technologies were used or had been used; technologies approved for evaluation were used on a restricted basis; and technologies not approved were not used.

KEY FINDINGS

- Follow-up information was obtained for 59 of 60 technologies (98.3%). Four reports had made no formal recommendation and were excluded from the compliance analysis.
- Overall compliance with TAU recommendations was recorded as **91.9%** (51/56). 41 technologies remained in use: 24 routinely and 17 on a restricted basis. Local data collection was identified for **56%** of technologies: 9/24 routinely used technologies and 14/17 technologies in restricted use.

CONCLUSIONS

- TAU recommendations were generally reflected in subsequent MUHC practice. However, post-implementation data collection and reassessment were less systematic.

- A standardized follow-up process, particularly for technologies approved for evaluation, would strengthen the link between conditional adoption, generation of local evidence, and subsequent decisions regarding routine adoption, continued restriction, or discontinuation.

BEST PRACTICE RECOMMENDATIONS

1. **Define the data plan at approval:** For technologies *Approved for Evaluation*, specify the eligible population, responsible lead, required outcomes/variables, data source, and planned reassessment date.
2. **Standardize post-HTA follow-up:** Confirm implementation at 3–6 months, review data and adherence at about 12 months, and conduct formal reassessment by 18–24 months where appropriate.
3. **Use trigger-based reassessment:** Reopen an assessment earlier if there are major safety signals, rapid uptake, cost increases, new evidence/guidelines, or use beyond the approved indication.
4. **Maintain a TAU follow-up registry:** Track recommendation status, implementation, conditions of approval, data collection, responsible leads, and upcoming review dates in a simple centralized system.
5. **Close the evaluation loop:** Technologies *Approved for Evaluation* should ultimately return for a documented decision: routine approval, continued restricted use with revised conditions, or discontinuation.

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L'Unité d'évaluation des technologies (UETMIS-TAU) du Centre universitaire de santé McGill (CUSM) réalise des évaluations des technologies de la santé en milieu hospitalier afin d'éclairer les décisions relatives à l'adoption, à l'utilisation restreinte ou à la non-adoption de ces technologies. Dès sa création en 2001, TAU s'était fixée comme condition l'évaluation régulière de l'impact de ses recommandations. Par conséquent, en 2021, TAU a effectué un suivi des évaluations antérieures afin de déterminer si les recommandations avaient été mises en œuvre et si des données locales étaient recueillies après leur adoption.

OBJECTIF

1. Évaluer la conformité aux recommandations TAU
2. Évaluer si des données locales ont été collectées après la mise en œuvre, notamment pour les technologies approuvées pour une utilisation/évaluation restreinte.

MÉTHODES

- Soixante technologies évaluées entre 2001 et 2021 ont été incluses. Les équipes cliniques ont été contactées afin de déterminer l'état actuel de chaque technologie et la disponibilité des données locales. Lorsque les informations n'ont pu être obtenues directement auprès des équipes cliniques, des informations complémentaires ont été recherchées auprès de l'entrepôt de données, des archives médicales, des services financiers, de la pharmacie et du service de contrôle des infections.
- La conformité a été définie selon que l'utilisation réelle était conforme à la recommandation de pratique courante : les technologies approuvées ont été utilisées ou avaient été utilisées ; les technologies approuvées pour l'évaluation ont été utilisées de manière restreinte ; et les technologies non approuvées n'ont pas été utilisées.

PRINCIPAUX RÉSULTATS

- Des informations complémentaires ont été obtenues pour 59 des 60 technologies (98,3 %).
- Quatre rapports ne comportaient aucune recommandation formelle et ont été exclus de l'analyse de conformité. Le taux global de conformité aux recommandations TAU était de 91,9 % (51/56).

- 41 technologies étaient toujours utilisées : 24 de façon routinière et 17 de façon restreinte. La collecte de données locales a été identifiée pour 56% des technologies : 9 des 24 technologies utilisées de façon routinière et 14 des 17 technologies utilisées de façon restreinte.

CONCLUSIONS

- Les recommandations du TAU relatives aux pratiques habituelles ont généralement été prises en compte dans les pratiques du CUSM. Toutefois, la collecte de données et la réévaluation après la mise en œuvre ont été moins systématiques.
- Un processus de suivi normalisé, particulièrement pour les technologies approuvées pour évaluation, renforcerait le lien entre l'adoption conditionnelle, la production de données probantes locales et les décisions subséquentes concernant l'adoption systématique, le maintien des restrictions, ou l'abandon.

RECOMMANDATIONS DE BONNES PRATIQUES

1. **Définir le plan de données lors de l'approbation :** Pour les technologies approuvées pour évaluation, préciser la population admissible, le responsable, les résultats/variables requis, la source des données et la date de réévaluation prévue.
2. **Standardiser le suivi post-ETMIS :** Confirmer la mise en œuvre à 3-6 mois, examiner les données et l'adhérence au bout de 12 mois environ et procéder à une réévaluation formelle entre 18 et 24 mois, le cas échéant.
3. **Utiliser une réévaluation déclenchée par des facteurs spécifiques :** Rouvrir une évaluation plus tôt en cas de signaux de sécurité majeurs, d'adoption rapide, d'augmentation des coûts, de nouvelles données probantes/lignes directrices ou d'utilisation au-delà de l'indication approuvée.
4. **Tenir un registre de suivi des pratiques courantes :** Suivre l'état des recommandations, la mise en œuvre, les conditions d'approbation, la collecte de données, les responsables et les dates des prochains examens dans un système centralisé simple.
5. **Boucler la boucle d'évaluation :** Les technologies approuvées pour évaluation doivent finalement faire l'objet d'une décision documentée : approbation de routine, maintien d'une utilisation restreinte avec des conditions révisées ou abandon.

Impact of TAU Recommendations on MUHC Practice: Follow-up of 60 health technologies evaluated from 2001 to 2021

1. BACKGROUND

The MUHC Technology Assessment Unit (TAU) was established in 2001 to support evidence-informed decisions regarding the adoption of novel drugs, devices, procedures and other health technologies. It was a self-imposed condition of the creation of TAU that regular evaluation of the impact of its recommendations be conducted (McGregor 2008). In 2021, TAU undertook a follow-up of 60 completed assessments to examine the downstream impact of its recommendations on hospital practice.

2. OBJECTIVE

This brief report addresses two objectives:

1. Assess compliance with TAU recommendations;

2. Assess whether local data were being collected after implementation, particularly for technologies approved for restricted use/evaluation.

3. METHODS

We used a stepwise approach to follow-up on 60 reports completed between 2001 and 2021.

3.1 Self-reported questionnaires

- **1st survey round:** In June 2021, clinical heads received a short project-specific survey asking about current use, the population in which the technology was used, whether data were being collected, and the appropriate contact person. Where needed, consulting physicians were contacted.
- **2nd survey round:** A more detailed survey was then sent in August 2021 to the person responsible for the technology. When clinical teams could not provide the required information, TAU sought data from the MUHC Data Warehouse/medical archivists and from Finance, Pharmacy and Infection Control. The detailed survey collected current status, reasons for non-use or discontinuation, patient selection criteria, approximate annual volume, and availability of clinical data or registries.

3.2 Compliance with recommendations definition

Table 1. Compliance definition

TAU recommendation	Practice considered compliant
Approved	Technology was currently used or had been used. Discontinuation for an external reason (e.g., product no longer manufactured) was not considered non-compliance.
Approved for evaluation / restricted use	Use did not expand beyond the recommended restricted/evaluation context. Restricted use, prior restricted use, or non-use was not treated as a violation of the recommendation.
Not approved	Technology was not in use.

Four brief reports without an actionable recommendation were excluded from the compliance denominator. For data collection, both “Yes” and “Limited data collection” were counted as documented data collection.

4. RESULTS

Follow-up was completed for 59 of 60 technologies (98.3%). For 40 projects (66.7%), information was obtained directly from the initial survey of clinical teams. For the remaining projects, information was supplemented by the Data Warehouse/medical archivists, Finance, Pharmacy and/or Infection Control. Administrative sources could help establish volumes or use, but generally could not confirm whether the technology was used for the exact TAU-recommended indication.

4.1 Compliance with TAU recommendations

Among 56 projects with an evaluable recommendation, 51 were compliant with the TAU recommendation (91.1%). Five projects (8.9%) showed practice that was broader than, or inconsistent with, the recommendation (Table 2). One approved technology was no longer in use because the product was no longer manufactured; this was considered compliant with the original recommendation.

Table 2. Breakdown of non-compliant technologies

Recommendation/practice mismatch	n	Interpretation
Not approved, but in use	2	Technology was being used despite a recommendation not to approve.
Approved for restricted use, but used routinely	2	Use had expanded beyond the restricted population/context.
Recommended only in a research context, but used outside research	1	Use continued beyond the research-only condition.

4.2 Data collection after implementation

41 technologies were still in use at follow-up: 24 in routine use and 17 in restricted use (Table 3). Documented data collection was identified for 23 of these 41 technologies (56.1%).

Table 3. Technologies with documented data collection

Current use	Technologies, n	Documented data collection, n	Proportion
Routine use	24	9	37.5%
Restricted use	17	14	82.4%
Total	**41**	**23**	**56.1%**

Thus, documented data collection was approximately twice as common among technologies in restricted use as among technologies in routine use. This pattern is consistent with the intent of conditional/restricted approval, where local evidence generation is often part of the rationale for continued use.

5. DISCUSSION

This review of 60 health technology assessments completed since the inception of TAU suggests that TAU recommendations have generally translated into practice, but also highlights opportunities to strengthen the lifecycle approach to health technology assessment.

5.1 Post-implementation data access: Current status and barriers

- **Measuring value of adopted technologies:** Data collection, as essential aspect of ongoing evaluation, remained sporadic. This was most evident among technologies that had transitioned to routine use, where documented data collection was considerably less common than among technologies that remained restricted. Once a technology is routinely adopted, the original uncertainty that prompted an evaluation can easily be lost, making it more difficult to determine whether the technology continues to provide the expected clinical, operational, and economic value.
- **Data infrastructure:**
    - Over the past decade, the MUHC has built a robust data warehouse that pools information from multiple hospital sources, including admissions, pharmacy and operating room data. These data create an important foundation for developing prospective patient trajectories and generating real-world evidence on the use and outcomes of health technologies. However, **having data available within the organization does not necessarily translate into accessible evidence for clinical decision-making**. Timely access to relevant data, availability of analytic expertise, and the capacity of clinical teams to define and maintain appropriate data collection processes remain important practical barriers.
    - Our findings also illustrated that, while administrative data can often identify whether and how frequently a technology is being used, it may not capture the clinical indication, patient selection criteria, or outcomes needed to determine whether use remains consistent with the original TAU recommendation.

5.2 Opportunities

Closing this learning health system loop requires:

- **A clearer pathway** for clinical teams to establish prospective data collection at the time a technology is approved for evaluation. Data requirements should be defined prospectively, with agreement on the population, minimum variables and outcomes, responsible team, data source, and timing of reassessment. Where feasible, these requirements should be incorporated into existing MUHC data systems rather than relying on manual data extraction by individual clinical teams, to reduce the burden on clinicians while improving the consistency and sustainability of local evidence generation.
- **A standardized post-HTA follow-up process** to support this lifecycle approach. Early follow-up could confirm implementation and adherence to the recommendation, while subsequent review could assess whether sufficient local evidence has been

generated to support a change in status. The intensity and timing of follow-up should reflect the degree of uncertainty, risk, cost, and conditions attached to the original recommendation. For technologies *Approved for Evaluation*, however, follow-up should be considered an integral part of the approval pathway rather than an optional activity.

Together, improved access to data, appropriate analytic support, and a defined post-HTA follow-up pathway would allow the MUHC to move from a model in **which HTA primarily informs initial adoption decisions toward one in which evidence is generated and used throughout the lifecycle of a technology**. This would enable conditional recommendations to be revisited as local evidence accumulates and help ensure that technologies continue to deliver value after implementation.

6. CONCLUSION

- **Compliance with TAU recommendations:** The 2021 follow-up suggests that TAU recommendations had a high level of implementation at the MUHC: approximately nine in ten evaluable recommendations were reflected in subsequent practice.
    - The small number of discordant cases largely involved expansion of restricted or research-context technologies.
- **Data collection:** The review also highlights a lifecycle HTA gap. Although data collection was common when technologies remained restricted, it was not universal, and less than half of technologies in routine use had documented data collection.

7. BEST PRACTICE RECOMMENDATIONS

The findings suggest that TAU's role should not necessarily end when a recommendation is issued. This is particularly important for **Approved for Evaluation** recommendations, where restricted adoption is intended to generate information that can reduce uncertainty and support a later decision.

1. **Define the data plan at approval:** For technologies *Approved for Evaluation*, specify the eligible population, responsible lead, required outcomes/variables, data source, and planned reassessment date.
2. **Standardize post-HTA follow-up:** Confirm implementation at 3–6 months, review data and adherence at about 12 months, and conduct formal reassessment by 18–24 months where appropriate.

3. **Use trigger-based reassessment:** Reopen an assessment earlier if there are major safety signals, rapid uptake, cost increases, new evidence/guidelines, or use beyond the approved indication.
4. **Maintain a TAU follow-up registry:** Track recommendation status, implementation, conditions of approval, data collection, responsible leads, and upcoming review dates in a simple centralized system.
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APPENDIX

APPENDIX A SURVEY QUESTIONNAIRES

The 2021 follow-up used an initial screening survey followed by an online Alchemer survey with branching logic according to the TAU recommendation and the technology's current status. The three attached online survey versions are consolidated below; [technology] denotes the project-specific technology/intervention name.

A1. Initial screening survey to clinical heads

1. What is the current status of the technology/intervention in your department?

2. In which patient population is/was the technology/intervention used?

3. Have data been collected on its use and outcomes?

4. Who is the appropriate contact person for a more detailed follow-up survey?

A2. Detailed online survey - common questions

#	Question	Response options / notes
1	Name of technology/intervention evaluated by TAU.	Open text / pre-populated field
2	Recommendation issued by TAU.	Open text / pre-populated field
3	Conditions issued by TAU (where applicable).	Open text / pre-populated field
4	Current status of [technology] in your department.	Currently being used; Was used but not currently; Never used.
5	Your name and title.	Open text / pre-populated field
6	Department/Division.	Open text / pre-populated field
7	Position.	Open text / pre-populated field

A3. Branch questions: technology not approved for routine use

Question	Response options
If [technology] is currently being used: Could you indicate why it is currently being used?	Only being used in a research setting; There has been a change in clinical guidelines since TAU's report reflecting better evidence; Other (write in).
If [technology] was used previously: Could you indicate why it was used?	Only used in a research setting; There had been a change in clinical guidelines reflecting better evidence; Other (write in).
Could you share the articles or a link relating to the new evidence?	Open text / link.

A4. Branch questions: approved but not currently used / stopped

Question	Response options / notes
Could you explain why it is currently NOT being used (check all that apply)?	Safety reasons; Budgetary/financial reasons; Change in clinical practice guidelines; Found a better alternative; Lack of human resources; Ethical or legal reasons; Other; I don't know.
Why was it stopped (check all that apply)?	Same response options as above.
Could you expand on the reason(s) above?	Open text.
When was it stopped (year)?	Year.
Could you provide the average number of patients who were treated with this procedure in its most recent year of use?	Numeric / open text.
Could you describe the selection criteria (demographic age and sex, clinical indication) for this test or procedure?	Open text.

A5. Branch questions: research-context recommendation

Question	Response options / notes
Is [technology] still being used in the context of a research study?	Yes; No; I don't know.
Was [technology] used in the context of a research study?	Yes; No; I don't know.
How is/was the research study funded?	Through the MUHC budget; Through personal research funds; Through the foundation; Other.
Why was it stopped (check all that apply)?	Safety reasons; Budgetary/financial reasons; Change in clinical practice guidelines; Found a

Question	Response options / notes
	better alternative; Lack of human resources; Ethical or legal reasons; Other; I don't know.
Why was it never used (check all that apply)?	Same response options as above.
Could you expand on the reason(s) above?	Open text.
When was it stopped (year)?	Year.

A6. Utilization and data questions

Question	Response options / notes
Could you provide the average number of patients who were treated with this procedure in its most recent year of use?	Numeric / open text.
Could you describe the selection criteria (demographic age and sex, clinical indication) for this test or procedure?	Open text.
Would you be able to share your data or registry with TAU so we could update measures on clinical effectiveness, safety and volume?	Yes; Not collecting data; Other (write in).
Please upload your data file.	File upload.
Whom could we contact to obtain further information?	Name, email, phone number.
Do you have any additional comments?	Open text.

REFERENCES

McGregor, Maurice. 2008. *Impact of TAU reports.* Montreal: Health Technology Assessment Unit of the MUHC. Retrieved from: https://muhc.ca/sites/default/files/micro/m-TAU/FINAL_TAU_IMPACT_REPORT_FEB_2008.pdf