

TO BUY OR NOT TO BUY: HOW EVIDENCE INFORMS CANADIAN HEALTH TECHNOLOGY DECISIONS

D. Ann Vosilla, RN, ASCFS (Hons), Liaison Officer, BC; Donna Champagne, RN, BN, MPA,
Liaison Officer, MB

Canadian Agency for Drugs and Technologies in Health

SO MANY CHOICES, SO FEW FUNDS

Health decision-makers must choose from among the almost unlimited availability of health devices. Being able to choose those that have the most likelihood of benefits with fewest adverse effects is crucial in our fast-paced and chronically underfunded environment. To identify advantageous technologies from a steady stream of new diagnostic and treatment options that will improve outcomes on patient health and deliver value for every health dollar invested, professionals need clear answers to very difficult questions. They must consider how each technology will affect the health of Canadians, both those who benefit from the treatment choice and those whose treatment choices are limited by the decision. Choosing from comparable alternatives is a time-consuming task. Health professionals need to consider what the value is for the investment and whether there are other health service implications to be considered. How does one choose technologies that make the most significant impact on the health of a particular population without jeopardizing funding access for other populations and their health needs? In other words, what are the opportunity costs?

Health technology assessment (HTA) is one of the available supports in this process that can provide decision-makers with a systematic review of these and other considerations so they can focus on how to apply all this information to their own unique circumstances. In Canada, the national agency providing HTA support is the Canadian Agency for Drugs and Technologies in Health (CADTH). CADTH informs decisions through systematic reviews of literature, providing credible, impartial advice and evidence-based information about the effectiveness and efficiency of health technologies. Provincially located CADTH Liaison Officers provide a personal link to these funded services to help biomedical engineers and other health technology decision-makers access these important supports.

HEALTH TECHNOLOGY ASSESSMENT

HTA at CADTH is funded to provide a range of supports across the diffusion cycle of health

technologies and provides an unbiased review of evidence to support and inform those who make decisions about health policy and purchasing, service management, and clinical practice. These comprehensive HTAs follow structured and rigorous scientific methods, including widely accepted methods for scientific peer review. Reviewers include a multidisciplinary team of research scientists, economists, health care professionals, and information specialists who work together to examine all the available evidence through rigorous systematic reviews to produce credible comprehensive reports. Technologies are examined at all stages of their life cycle, from development through to maturity and obsolescence.

The publicly available reviews focus on the technical, clinical, economic, budgetary, and health service impact a particular technology may have in the health care system. The reports include contextual information on organizational, societal, ethical, and political issues and inform patient indications, current treatment practices, regulatory issues, adverse effects, and health services impact. These in-depth, comprehensive reviews are funded by participating health ministries in Canada to help ensure relevance and sustainability of Canada's health care agenda and service provision. Full HTA comprehensive reports are time-extensive and meant to inform decisions about those technologies that are of very high cost and/or clinical significance in the long term. However, in the real world, decision-makers are not always able to wait — they urgently require evidence-based information to inform the decisions they need to make today.

Health Technology Inquiry Service

Rapid and continual advances in health care have made evidence-based information on medical technologies an essential part of informed decision-making. While comprehensive HTA reports are used to support many important deliberations, the urgency of some decisions requires a more immediate response. CADTH has a rapid response service that meets the needs of those more urgent decisions. The Health Technology Inquiry Service (HTIS) provides decision-makers with rapid access to HTA information. This

service for health providers responds to inquiries with timely and tailored reviews to questions about health technologies such as drugs, devices, diagnostic tests, and medical and surgical procedures and equipment. Rapid response provides reports of the best available evidence within the time frame needed by the requestor, depending on the urgency of the request and the type of information needed. The most rigorous and in-depth response will take up to six months. On average, 30 requests are received every month from all across Canada, and the demand for this service continues to grow and help health professionals and jurisdictions sort through the plethora of information, or the lack of it, to assist in decision-making.

HOW HTA WORKS

Health Care Decision Support

Reports on the use of HTA and HTIS reviews have informed us about how jurisdictions and health professionals have used CADTH information. These include contextual, clinical, and economic considerations for purchase decisions, clinical decisions, policy decisions, optimum practice decisions, and guideline decisions, to name a few.

Purchase Decisions

Determining which device is best suited to a particular population is one example of a purchase decision. A purchase decision could be choosing from among the almost unlimited device needs when there is limited funding, and it can also be choosing from among differing service provision needs. CADTH information has been used for these types of decisions, such as defining what types of thermometers should be used for hospitalized patients.¹ In addition, a decision regarding what pelvic floor repairs systems were suitable for implementation was supported by evidence concerning this technology.²

Clinical Decisions

Evidence needs concerning the use of high volume and low volume infusion pump use in pediatrics prompted a review that was then used to support standardization of parental therapy manuals across the region.³ Health professionals relate that sometimes differing clinical opinions exist, and reports have been used as a starting point to discussions on topics that may be more sensitive.

Policy Decisions

A report regarding which providers are best suited to perform portable ultrasound in an emergency

department and under what circumstances has been used to inform policy decisions. The circumstances included the specific diagnostic scan as well as the competencies required by a provider to perform a reliable scan.^{4,5}

Optimum Practice Decisions

There has been substantial demand for information to help determine the best ways to use given devices for particular situations, such as bladder scanners to reduce risk to both patients and health providers by reducing nosocomial infections resulting from over- or under-catherization. An HTIS review was found to be most useful in informing which patients, which units, and which providers are best advantaged by use of bladder scanners and under what circumstances the scanners are most cost-effective and clinically effective.⁶

Guideline Decisions

Jurisdictions have used HTA and HTIS reviews to assist in the development of guidelines for clinical practice. One report supported the development of guidelines for monitoring patients undergoing procedural sedation.^{7,8}

MOBILIZATION OF EVIDENCE

Health technology evidence is available from Canada's health technology agency (CADTH), though the provision of existing reports or by requesting a report tailored to specific requirements. Local needs are supported through Liaison Officers, who facilitate access to health technology information and assist in the mobilization of evidence. In this way, local needs are highlighted, ensuring that resources remain relevant.

The outreach and interaction provided by the agency's Liaison Officers help health decision-makers formulate research questions, access reports, and connect to other health professionals who may be facing the same challenges. Linking health professionals across Canada encourages resource and knowledge exchange, evidence uptake, and reduces duplication of effort. One example of support found very helpful for jurisdictions is the guidance offered by Liaison Officers in interpreting and applying evidence to each unique circumstance through workshop provisions and one-on-one assistance. Support is available at liaisonofficersinfo@cadth.ca.

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