Maximizing the Impact of
Health Technology Assessment:
The Alberta Framework

Department of Health

Innovation and Stakeholder Relations Division

Research and Innovation Branch

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Executive Summary

Health Technology Assessment (HTA) is widely used to inform decisions on whether to adopt a new health technology. HTA also provides the information needed to make decisions on the right type, amount, and use of health technology innovations to ensure health needs are efficiently and equitably addressed.

In 2004, the Government of Alberta established the Alberta Health Technologies Decision Process (AHTDP), a formalized HTA process to provide evidence to decision-makers to help them determine whether to publicly provide select health technologies. Since then, the AHTDP has undergone a series of changes driven by quality improvement considerations. Recently, the AHTDP has introduced the concept of an HTA client that is responsible for championing the outcome, and has adjusted the objective of HTAs to provide advice and recommendations (not decisions) on the appropriate use of health technologies, services, and models of care, with consideration for all system-wide alternatives, to optimize the delivery of health services.

These foundational changes have addressed several of the acute challenges facing Alberta's HTA process. However, more work is needed to ensure these changes are reflected at each stage of the review process. Going forward, HTAs and other reviews will focus increasingly on how to optimize health care delivery from a system-wide perspective, by balancing costs and improvements in health. Improvements in the areas of topic selection, scope, and scale of HTAs, and implementation will advance the capacity of the HTA and other tools to support evidence-informed decision making.

Topic Selection: A needs-driven approach will be established to identify and select topics for review. Key priorities will be pulled from provincial, research, and innovation strategic plans. In addition, the Department will identify low-value services, treatments, tests, and technologies that may have become obsolete over time, may have not been formally assessed, or are potentially being used beyond their proven effectiveness, for consideration for reassessment.

Expanded Scope: The Department will increase the impact of its reviews by expanding review scope beyond single technology adoption queries. The Department will now conduct assessments of disease pathways and models of care, as well as comparative analyses of system-wide alternatives of a technology. Going forward, HTAs will provide advice and recommendations on the optimal use of health technologies, services, and models of care.

Implementation: To support successful implementation, the Department will identify, prior to undertaking a review, the appropriate operational, clinical, and financial health system leaders who are able to champion change in the relevant area(s) and then work with them throughout the process. A formal evaluation of implementation approaches will be integrated into each HTA to provide evidence, information, and projections on the impact of various care delivery alternatives on the health system structure, processes, and resources.

At the conclusion of a review, the Department will monitor and, where appropriate, evaluate policy implementation of HTA recommendations. Evaluation closes the feedback loop from post-policy review to policy development, thereby strengthening the link between policy and evidence.

1. Context

Over the past decade, there have been substantial transformations in the health technology landscape. Demographic and socioeconomic shifts have changed the nature of health care demand. At the same time, strong research and development sectors have developed drugs, technologies, and treatment protocols that can significantly advance disease treatment, improve patient outcomes, prevent deaths, shorten waitlists, and reduce utilization of tertiary and emergency care.

Patients and their health care providers value and expect access to new and improved innovations that could improve their quality of life and quality of care. Health system decision-makers are challenged to promote innovation while also ensuring value for money from a system perspective, which may not align with how highly an individual values a technology. To address this, Health Technology Assessment (HTA) is used widely to inform decisions on whether to adopt a new health technology.

Suboptimal use of innovative health technologies and services (e.g., delayed introduction, underuse, overuse, or misuse) not only affects patient care, but also the efficiency of the health care system. HTA provides the information needed to make decisions on the right type, amount, and use of health innovations to ensure health needs are efficiently and equitably addressed.

In 2004, the Government of Alberta established the Alberta Health Technologies Decision Process (AHTDP), a formalized HTA process to provide evidence to decision-makers to help them determine whether to publicly provide select health technologies. The intake process of topics for review consisted of an open nomination process and horizon scanning, followed by screening against criteria such as clinical benefit, cost, health system impact, and evidence availability. The Department of Health established partnerships with three internationally recognized, arms-length institutions experienced in health technology assessment to conduct reviews: the University of Alberta, the University of Calgary, and the Institute of Health Economics. Reviews were generally narrow, focusing on a comparison of the safety, effectiveness, and cost of a few select technologies with highly specific applications. Review findings and recommendations were directly routed to the Deputy Minister of Health for a decision on publicly funding a technology or service. Decisions were communicated to regional health authorities, and often, but not always, additional funding was provided to support capital acquisition and operating costs.

Many AHTDP-supported public funding decisions encountered difficulties that prevented or hindered implementation, including lack of alignment with system priorities, clinical needs, and broader service planning; insufficient engagement of key decision-makers and planners; lack of funds; and inadequate information on how to implement for optimal results.

2. Current State

Recently, the AHTDP underwent a quality improvement redesign to enhance the responsiveness of the provincial review process. A key revision to the process included shortening the timeline of a review from two years to one year.

Since the redesign, quality improvement considerations have continued to drive changes to the AHTDP. To promote and enable effective uptake of HTAs and support appropriateness in Alberta's health care system, two overarching changes are underway. The two areas of focus since the redesign are:

2.1 HTA Client

The introduction of the concept of an HTA "client" after the redesign shifted the recommendation away from the Deputy Minister of Health to financial and operational decision-making authorities within the health care system that are committed to using the outcome of the HTA in its service delivery decisions and planning. The client must have the capacity to respond to unmet or changing health care needs of Albertans and the authority to implement HTA-informed decisions. Ideally, the client will have ongoing or planned initiatives in the program area that can be informed and strengthened by evidence from an HTA. The topic of the HTA should also be a pre-existing priority area for the client. The identity of the client is dependent on the focus and scope of a review; however, potential clients could include program areas falling under the scope of the Department of Health and/or Alberta Health Services, as well as health service agencies considered non-governmental organizations. The client may be only one area or agency, or a group of decision makers representing multiple governmental and non-government organizations.

The client works with the Department to formulate relevant research questions for the HTA, is the primary recipient review findings and recommendations, and leads the implementation.

The benefit of HTA to potential clients is a robust value proposition to support health system innovation. The benefit to the Department is the assurance that decision making is evidence-informed and that HTA resources are utilized to the maximum value of investment.

2.2 HTA Objective

Discrepancies between the availability of health innovations, public demand for timely, high-quality care, and limited health system resources have led health care planners in Alberta to ask how they can provide more appropriate care (right care, right place, right time) and build a sustainable health care system. In alignment with this focus, the objective of HTA has evolved. Going forward, HTA in Alberta will aim to provide advice and recommendations (not decisions) on the appropriate use of health technologies, services, and models of care, with consideration for all system-wide alternatives, to optimize the delivery of health services.

Care is most appropriate when unnecessary or wasteful steps have been eliminated from the health care delivery process, non-beneficial care is minimized, the service provided is effective

at mitigating the health issue, and all resources are consumed at their maximum potential throughout the process. Optimized health care delivery occurs when a systemic approach is taken to plan and provide appropriate care in a way that achieves better patient outcomes while increasing health system sustainability. In this, optimized health care delivery addresses both quality and value, and relies on the shared responsibility of resource stewardship among health system decision makers, planners, and clinicians. HTA will achieve this objective by identifying how to most effectively and efficiently apply existing resources throughout the health care system to achieve maximum value.

These foundational changes addressed several of the acute challenges facing Alberta's HTA process. However, more work is needed to ensure these changes are reflected at each stage of the review process. Additionally, there are specific ongoing challenges with three areas that require targeted solutions: topic selection, the type and scope of topics reviewed, and implementation of review findings.

2.3 Topic Selection

Several factors in the topic selection phase have hindered the pursuit of appropriate and timely reviews:

- Topics are often 'pushed' for review by clinicians and others, without endorsement by or awareness of health system decision-makers and planners.
- Those who nominate topics are often seeking evidence from the HTA to support introduction of a new technology or service, rather than an evidence-based recommendation on whether or how to introduce care delivery innovations.
- Potential topics are not reviewed against health system priorities, the needs of health system decision-makers and planners, or implementation feasibility.
- There has not yet been a strategy for broader engagement from health system partners and key decision-makers in topic selection decisions.

2.4 Scope

HTAs have been limited in their ability to affect system-wide change due to their narrow focus on:

- Discrete technologies and services with a highly specific purpose, without considering the systemic perspective of either the larger clinical or disease pathway or the broad service delivery challenges facing the clinical area.
- Adopting new technologies into the health care system, rather than informing decision-makers on how to optimize health care delivery.

2.5 Implementation

The Department and key stakeholders in the review process continue to struggle to ensure uptake and implementation of HTA findings. Stakeholders have identified several reasons for this:

- The appropriate client for the review has not been consistently identified or engaged early enough in the process to ensure their buy-in and participation in planning a review that will meet their needs.
- HTA review planning has not consistently taken into account feasibility of implementation, key operational and financial considerations, and health system impact, meaning that the end results cannot fully inform decision-making.
- HTA reviews lack buy-in and a champion from the appropriate operational, clinical and financial leaders.

3. The Future State of HTA in Alberta: Maximizing Impact

HTAs and other reviews must bridge the areas of research, public policy, and service delivery to address government and health system priorities, and help build a sustainable health care system. Going forward, HTAs and other reviews will focus increasingly on how to optimize health care delivery from a system-wide perspective by balancing costs and improvements in health. Within a given context, decision-makers can use this information to make tradeoffs and choose the most appropriate health care delivery approach. HTAs and other reviews will avoid costly new technology adoption, while maintaining the nimbleness to not impede the adoption of efficient innovations. The following adjustments will be made to the Department's review process to focus increasingly on optimizing the health system, while continuing to conduct reviews to support adoption of efficient innovations.

3.1 Topic Selection

Moving forward, the Department will focus its resources on topics that align with government and health system priorities and that can have significant impact on health care delivery. A needs-driven approach will be established to identify and select topics for review. Key priorities and strategic alignment will be pulled from sources including:

- Government of Alberta Health Business Plan and supporting strategies;
- Alberta Health Services Business Plan;
- Alberta Health Services Strategy for Clinical Health Research, Innovation and Analytics; and
- Strategic Clinical Network™ Transformational Road Maps.

The Department will select HTA topics that promote timely, high quality, appropriate, and accessible care. Priority will be given to topics for which program and service areas require evidence and evidence-informed recommendations to:

- Design and deliver the right care, in the right place, at the right time;
- Enhance the value of health care services (achieve a higher quality of care at a lower cost);
- Align with the overarching health system shift from a focus on institutional and acute settings to one of care within the community; and
- Identify innovative health care delivery approaches to improve health system sustainability and quality.

Topics could pertain to priority areas such as mental health and addiction; primary, continuing, community and home care; health information management; personal care and support services; scopes of practice; and distribution of health care providers. In selecting topics, the aim is to produce evidence and recommendations with direct utility for decision makers, to further advance key health system priorities, to address unmet clinical needs, and to promote a culture of evidence-informed practice.

Health system stakeholders with direct knowledge of care needs, such as SCN, AHS Zone and operational leaders, will help the Department to identify the best path to innovation and generate information on what topics are likely to have the greatest implementation feasibility and impact.

An additional component of the selection process will involve the Department leveraging its data assets to identify low-value services, treatments, tests, and technologies that may have become obsolete over time, may not have been formally assessed, or are potentially being used beyond their proven effectiveness. These topics will be considered for reassessment. Reassessment is the evaluation of low-value or low-impact technologies to provide critical information to support decisions around technology procurement, decommissioning, replacement, and resource reallocation.

The Department will remain open to requests for reviews and reassessments to ensure a nimble and timely response to internal and external stakeholders' needs. Consideration will be given to topics of particular urgency that align with health system priorities; that deal with a significant advancement in disease management; that optimize health care delivery and enhance value within the health care system; and that require significant changes or resource reallocations.

3.2 Expanded Scope

HTAs assess and contextualize a wide variety of information, such as clinical need, safety, effectiveness, cost-effectiveness, budget impact, social, ethical, and legal considerations, patient and provider perspectives, jurisdictional practices, system and policy implications, and implementation feasibility. Throughout the review process, health system leaders and relevant stakeholders provide clinical, administrative, operational and implementation expertise, as well as advice on the conduct of the review, interpretation of findings, proposed policy options, and implementation. Stakeholders are engaged early and often throughout the process to ensure that findings and recommendations are accurate, relevant, and reflective of the Alberta context.

In line with the new HTA objective, the Department will increase the impact of its reviews by expanding review scope beyond single technology adoption queries. The Department will now conduct assessments of disease pathways and models of care, as well as comparative analyses of system-wide alternatives of a technology. Going forward, HTAs will provide advice and recommendations on the optimal use of health technologies, services and models of care.

Where feasible, when a topic involving a discrete technology is referred, the Department will propose a review which takes a broader systemic perspective and considers all applicable comparators and care alternatives in its analysis. The resulting HTA will advise on the most appropriate care delivery approach, which could include the discontinuation or reassessment of

comparators proving less effective or efficient. In sum, HTAs will be designed to help relevant decision-makers determine how to optimize health care delivery, from a system-wide perspective.

The scope of HTAs will be broadened to include evaluations of disease pathways and models of care for particular diseases or clinical areas. Pathway modelling will be conducted to define the sequence undertaken to provide care for a particular disease. Independent analysis of each activity will compare the value-add of each step in the pathway with alternative and opposing steps. The optimal pathway will be reconstructed using the sequence of steps that maximize effectiveness to the patient and efficiency to the health system. For evaluations of models of care, HTAs will compare the costs and outcomes of models that achieve optimal clinical benefits with those that achieve optimal economic efficiency or value for money. Within a given context, decision-makers can use this information to make tradeoffs and choose the most appropriate care delivery model and design the most appropriate clinical pathway.

To comprehensively assess care delivery models and care pathways, HTAs will draw upon many types of well-recognized evidence beyond clinical trials to ensure generalizability to the real world. Factors and information beyond "hard" evidence are needed to ensure that societal and political values are a component of the HTA. Taking into consideration real-world Alberta context, the many diverse factors for success, and system-wide impacts of various approaches, the HTA can provide a strong recommendation on the optimal approach(es) to service delivery in Alberta.

The Department will continue to expand provision of other evidence-based assessments including more responsive, customizable products that have components of a traditional AHTDP review, but are more flexible in their design to allow for reduced timelines and meet client needs.

3.3   Implementation

Health system interventions tend to be complex and multifaceted. The effectiveness of a health system intervention is critically influenced by how it is implemented in a given context. HTAs are initiated with action in mind. That is, knowledge is generated through HTAs with the specific intent of informing, supporting, provoking or motivating change to improve the health care system.

The HTA clients are tasked with the responsibility of mobilizing the evidence provided. Engaging clients from the beginning is necessary to bridge the evidence-to-implementation gap. During intake, scoping will include a business impact assessment and appraisal of intent and ability to implement. A strong and realistic commitment to implement and a sizeable body of evidence on clinical and cost effectiveness will be required before a topic is approved for review.

A formal review of implementation approaches will be integrated into each HTA to provide evidence, information, and projections on the impact of various care delivery alternatives on the health system structure, processes, and resources. Implementation approaches and impact will be evaluated according to various domains, such as: geographical, epidemiological, socio-cultural, socioeconomic, ethical, legal, political, and fiscal.

Knowledge translation (KT) is fundamental to designing accurate research objectives and appropriate research methods, communicating meaningful findings, and presenting well-developed options for intervention, all of which are critical to successful implementation. KT activities will

support implementation of review findings, including change management. They will be considered part of the review and be as carefully planned and designed as the review research methodology itself.

The review client(s) will be the primary audience for KT activities. These activities will be iterative throughout the process to enhance the probability of successful implementation. The practical needs and communication preferences of the client(s) will determine how to most effectively disseminate HTA findings. To ensure HTAs are useful, clients will receive HTA findings and recommendations in an accessible, understandable, and actionable format. The Department will act as the knowledge broker in translating HTA findings into this format.

Dissemination mechanisms for the HTA findings will be tailored to the specific needs of the client and other target audiences, as well as the intended purpose of the evidence (to inform, support, provoke or motivate improvements). Potential dissemination mechanisms will include:

- **Research and summary reports:** All HTA and reassessment reviews will yield a formal paper outlining research objectives, methods, findings, discussion, and options for next steps. A summary report of findings and policy options will also be produced for expeditious knowledge translation and absorption.
- **Dissemination and consultation:** Throughout the HTA process and at the conclusion of the formal report, the Department and HTA Partner will hold presentations, meetings, and consultations with clients, health system leaders, and other relevant stakeholders. In-person dissemination, where possible, will facilitate critical knowledge translation and encourage discussion of implementation considerations to assist change management.
- **Online distribution:** Where appropriate, HTAs and other evidence products will be housed online to disseminate information to interested parties and the public.
- **Project-specific KT tools:** Where the intention of the HTA is to produce evidence that will provoke a change in provider behaviours and practices, evidence-based tools (e.g. infographics) will be developed to support knowledge translation and change management. These tools may be provided directly to frontline providers. This mechanism may be particularly useful for sub-populations that would benefit from concise, rapidly interpretable materials and or large, wide-spread and semi-autonomous audiences (e.g. physicians).

4. Evaluation

The Department will monitor and, where appropriate, evaluate implementation of HTA recommendations.

Evaluation closes the feedback loop from post-policy review to policy development, thereby strengthening the link between policy and evidence. The goal is to assess a policy's effectiveness and efficiency during and after its implementation in order to determine whether the anticipated effects or benefits of the policy have been realized. Further, it is used to:

- Identify whether a policy change is achieving the desired results;
- Determine whether costs and benefits are in line with expectations;

- Uncover any unintended or unforeseen consequences; and
- Inform future policy development.

Where required, evaluation will begin at the policy development stage, with the methods, targets, and timelines for evaluation specified ahead of time.

In collaboration with relevant stakeholders, the Department will undertake evaluations in an effort to assist stakeholders in meeting their intended outcomes. Evaluations provide validation for decisions made by operational and financial leaders on the basis of the evidence provided by the Department and HTA partners. Where evaluations identify unintended consequences or unproven clinical and/or cost effectiveness, the Department will work with relevant stakeholders to take required action. Undertaking post-policy evaluations is in line with the Department's optimization efforts to proactively address inappropriate resource allocation and continuously improve clinical and cost effectiveness of care delivery in Alberta's health system.