# CADTH Evaluation — Phase 2

Independent Assessment

Submitted to Health Canada
by SECOR-KPMG

**September 2012**


SECOR


KPMG

# Abbreviations

| | |
|---|---|
| AB | Alberta |
| BC | British Columbia |
| CADTH | Canadian Agency for Drugs and Technologies in Health |
| CDA | Canadian Diabetes Association |
| CDEC | Canadian Drug Expert Committee |
| CDM | Conference of Deputy Ministers |
| CDR | Common Drug Review |
| CHRSP | Contextualized Health Research Synthesis Program |
| CNESH | Canadian Network for Environmental Scanning in Health |
| COMPUS | Canadian Optimal Medication Prescribing and Utilization Service |
| DACEHTA | Danish Centre for Health Technology Assessment |
| DNL | do not list |
| DPAC | Drug Policy Advisory Committee |
| F/P/T | federal/provincial/territorial |
| HC | health care |
| HTA | Health Technology Assessment |
| HTPAC | Health Technology Policy Advisory Committee |
| IHE | Alberta Technologies Decision Process and Institute of Health Economics |
| INESSS | L'Institut national d'excellence en santé et en services sociaux |
| KE | Knowledge Exchange |
| LO | Liaison Officer |
| MB | Manitoba |
| MRI | magnetic resonance imaging |
| MSAC | Medical Services Advisory Committee |
| NB | New Brunswick |
| NICE | National Institute for Health and Clinical Excellence |
| NIHB | Non-Insured Health Benefits |
| NL | Newfoundland and Labrador |
| NOKC | Norwegian Knowledge Centre for the Health Service |
| NS | Nova Scotia |
| OHTAC/MAS | Ontario Health Technology Advisory Committee |
| OU | Optimal Use |
| PBAC | Pharmaceutical Benefits Advisory Committee |
| PEI | Prince Edward Island |
| PLA | Product Listing Agreement |
| PLAC | Prostheses List Advisory Committee |
| PPI | Proton Pump Inhibitor |
| RRS | Rapid Response Service |
| SBU | Swedish Council on HTA |
| SHTG | Scottish Health Technologies Group |
| SK | Saskatchewan |
| SMBG | Self-Monitoring of Blood Glucose |
| SMC | Scottish Medicine Consortium |
| TR | Therapeutic Review |

# Contents

# 1 Context for this Document

In September 2011, SECOR-KPMG Consulting was engaged to conduct Phase 1 of CADTH's four-year external review as per obligations under the Health Canada funding agreement. The mandate was to:

- Assess the performance to date of four selected product lines (Common Drug Review, Health Technology Assessment/Optimal Use, Rapid Response Service, and COMPUS), using case studies to draw out key insights
- Assess the progress of CADTH's multi-year transformation progress
- Provide findings and supporting recommendations to improve the impact of CADTH's offerings.

The Phase 1 review was completed in early December 2011 and posted on CADTH's website. Notable findings were that CADTH:

- Is delivering against twin value propositions as a pan-Canadian health care agency:
  - As a **producer of evidence**, delivering value via the high quality of its reports, which are made available to all jurisdictions regardless of in-house health technology assessment (HTA) capacity, as well as the scale benefits and reduction of duplication achieved through activities centralized under one agency
  - As a **broker** of HTA activities, through CADTH's unique position of having a pan-Canadian view of key HTA priorities common to all jurisdictions, and an ability to broker HTA-related activities across multiple domestic and international producers.
- Is challenged in its ability to:
  - Deliver on its mission of impacting health systems, due to the decentralized decision-making context in which it operates
  - Consistently produce evidence that is timely and/or relevant to the federal, provincial, and territorial (F/P/T) jurisdictions that fund its activities.

From June to August 2012, SECOR-KPMG supported Phase 2 of the external evaluation of CADTH. The focus was fourfold:

1. Provide an update on CADTH's progress to date against its multi-year transformation
2. Drill deeper on the Value-for-Money (VfM) analysis initiated in Phase 1 via stakeholder consultations and selected case study analysis of the local outcomes of technology adoption in jurisdictions that did not follow CADTH guidance
3. Understand practices of peer HTA agencies vis-à-vis areas of challenge identified for CADTH in Phase 1
4. Summarize findings and supporting recommendations, building upon the recommendations provided in the Phase 1 review.

This report provides a summary of the methodology, key findings, and recommendations stemming from the second phase of the external evaluation of CADTH.

# 2. Executive Summary: Second Phase of CADTH External Review

This second phase of the external evaluation of CADTH focused on four streams of analysis:

1 Refreshed assessment of CADTH's progress against its transformation program
2 Value-for-Money (VfM) analysis for the core Common Drug Review (CDR) and Health Technology Assessment/Optimal Use (HTA/OU) products
3 Targeted review of HTA practices of nine peer agencies
4 Review of progress against Phase 1 recommendations.

**Progress on Transformation Program**
Since the 2009 John Wright report and associated recommendations, CADTH has undergone a multi-faceted, multi-phase transformation program to be a more customer-focused, impact-driven organization. During the Phase 1 Evaluation, CADTH was in the midst of the organizational transformation. SECOR checked in on progress over the eight months since our initial review in 2011 and found that momentum has continued in nearly every area. Slightly less than half of all major change initiatives are now complete.

**Common Drug Review Value-for-Money Assessment**
The assessment revealed that, overall, CDR is delivering on the three core objectives set for the program: reduce duplication of reviews by jurisdiction, provide drug plans with equal access to data, and consolidate the submission filing process for pharmaceutical manufacturers.

There are some areas of improvement that could be considered, such as systematically examining root causes for decision-making delays after reviews are complete in order for CDR to proactively address levers that are potentially within its control.

Beyond the core objectives of CDR, there were several areas where CDR is **indirectly** generating impact, such as helping to enhance public drug plan management, and improving health system performance. In all, while there are some areas for continuous improvement, system stakeholders feel the CDR offering has reached a level of maturity, and many are looking to take CDR to its next stage of evolution; several possible innovations have been offered, consistent with suggestions that were made in Phase 1 of the evaluation. We confirmed through the course of this evaluation that discussions are already underway for addressing many of the proposed expansion areas identified during interviews with key stakeholders.

**Health Technology Assessment/Optimal Use Value-for-Money Assessment**
Insights from the review of this product line were resolved along three lines:

- Non-drug technology appraisal-related strengths and challenges
- Drug technology appraisal-related strengths and challenges
- Insights applicable to both drug and non-drug technology appraisals.

Overall, the HTA/OU product line has a less stable value positioning amongst customers, especially in contrast to CDR, which has a well-defined methodology and receptor for the reviews. For both drug and non-drug HTA/OU projects, customers' perspective on the importance of the product and level of usage is inconsistent across the board. For non-drug HTAs, it remains unclear what is CADTH's unique value proposition, given how varied the projects are, how few reports are produced each year, and who are the targeted audiences. Issues well outside of CADTH's control, such as decentralization of the Canadian

health care system and the time lag required for diffusion of technologies, increase the challenge for HTA/OU to have a demonstrable impact on the health care system.

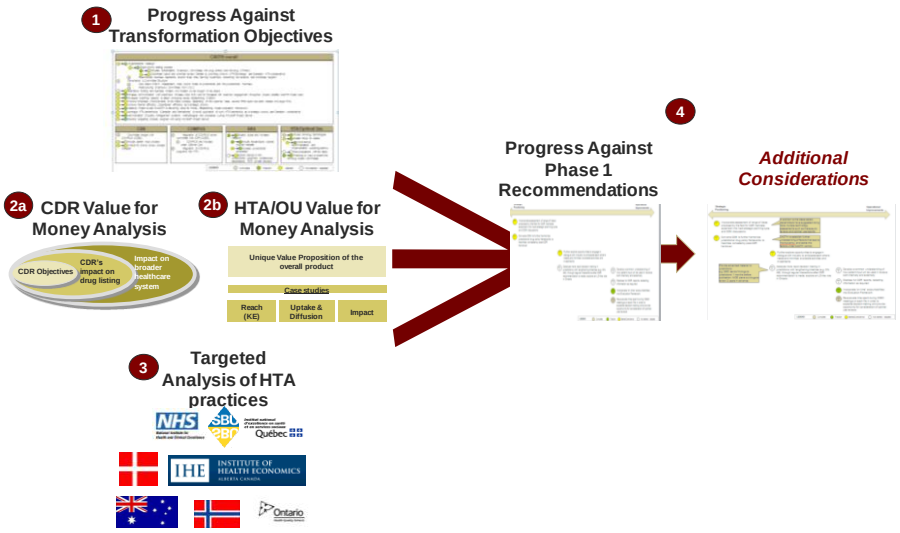
There are, however, examples of both drug and non-drug successful HTA projects where impact was significant, suggesting the " ingredients" are in place for a value-creating HTA offering. For example, the Medical Isotopes project demonstrated the valuable role of CADTH as a neutral body in developing a centralized, objective pan-Canadian decision framework on a complex, political issue related to a medical technology and associated clinical practices. Further still, the Self-Monitoring of Blood Glucose (SMBG) and Proton Pump Inhibitor (PPI) projects demonstrated that jurisdictions that followed CADTH's advice were able to realize some of the theoretical health outcome and/or cost improvements predicted in the HTA analysis.

**Peer Health Technology Assessment Agency Review**
A review of key features of peer HTA agencies showed that most mirror CADTH in their approach to their business model, and most experience (or have experienced) many of the challenges identified in Phase 1 and 2 of the evaluation. There were some notable examples of practices that CADTH could draw inspiration from as part of its ongoing improvement efforts.

**In Summary**
In combining the insights from the streams of analysis above, nearly all of the initial recommendations from the first phase of the evaluation are reinforced, and more concrete and/or refined suggestions for action have been tabled in this report. In reviewing progress against the initial set of recommendations from Phase 1, we were very pleased to see strong momentum already underway in addressing both the strategic issues and operational improvements.

# 2 Evaluation Methodology

For Phase 2 of the evaluation, analysis was conducted along four parallel streams, as illustrated in the schematic below:




1. **Progress against transformation objectives (stemming from the 2009 John Wright report)**

   Approximately eight months have lapsed since the Phase 1 Evaluation was conducted. SECOR reviewed CADTH's progress against its transformation objectives to understand whether and how CADTH has addressed recommendations from the John Wright report (2009), and the progress of implementing recommendations.

2. **Value-for-Money analysis for two main product lines: Common Drug Review and Health Technology Assessment/ Optimal Use**

   The majority of resources for this evaluation were focused on gaining a deeper understanding of the **value for money** (VfM) generated by the CDR and HTA/OU product lines to the Canadian health care system over the past four years. Interviews and analytical case studies were conducted to derive this understanding of impact. *Note: The Rapid Response Service (RRS) product line was not included in this phase of the evaluation, as extensive analysis, including a detailed customer survey, was already completed in the Phase 1 Evaluation.*

3. **Targeted review of other Health Technology Assessment agencies' practices**

   SECOR-KPMG conducted primary and secondary research on agencies from nine peer local and international jurisdictions by focusing on understanding how peer agencies have experienced and confronted the main challenges identified with CADTH in Phase 1.

4. **Progress against the suite of recommendations made in Phase 1**

   SECOR-KPMG conducted a review of progress against the many strategic and operational recommendations that came out of the Phase 1 Evaluation in December 2011. In addition to understanding progress to date, additional insights from the Phase 2 Evaluation were mapped to

the Phase 1 recommendations to create a "refreshed" set of go-forward recommendations stemming from the entire Phase 1 and Phase 2 external evaluation process.

Tailored evaluation frameworks were developed for each of the four streams of analysis. They will be described in further detail in each respective section that follows in this report.

Key inputs for this evaluation include (*note: please see "Sources" section in the Appendix for more details*):

- CADTH documents and data:
  - Management response to Phase 1 Evaluation
  - CADTH internal strategy documents (partnership, impact, customer service, Liaison Officer Program work plan, etc.)
  - For the HTA/OU product line: impact tracker, case study materials (previous analysis, reports, related publications)
- External secondary research:
  - For CDR VfM analysis: Wyatt Tracker database, and external publications (published and grey literature, news articles, and industry or patient group perspectives) relating to CDR's value proposition
  - For HTA/OU case studies: relevant IMS Brogan data, jurisdictional data
  - Peer HTA agency websites and relevant published and grey literature
- Primary research:
  - Thirty stakeholder consultations (internal: CADTH management, staff; external: customers, thought leaders)
  - Interviews with subject matter experts from five peer agencies
  - The stakeholder consult list was approved by the management and steering committee
- Evaluation Steering Committee:
  - Provided direction during regular Steering Committee meetings over the course of the evaluation process
- Membership included:
  - Abby Hoffman (Assistant Deputy Minister, Health Policy, Health Canada)
  - Barbara LeBrun (Director, Office of Pharmaceuticals Management Strategies, Health Canada)
  - Lynda Jobin (Vice-President, Corporate Services, CADTH)
  - Karen Lee (Director, Health Economics, CADTH
  - Andrew Dzuba (Evaluations Advisor, CADTH)
  - Stephanie Smith (Liaison Officer, New Brunswick, CADTH)

# 3 Progress against Transformation Objectives

## Methodology

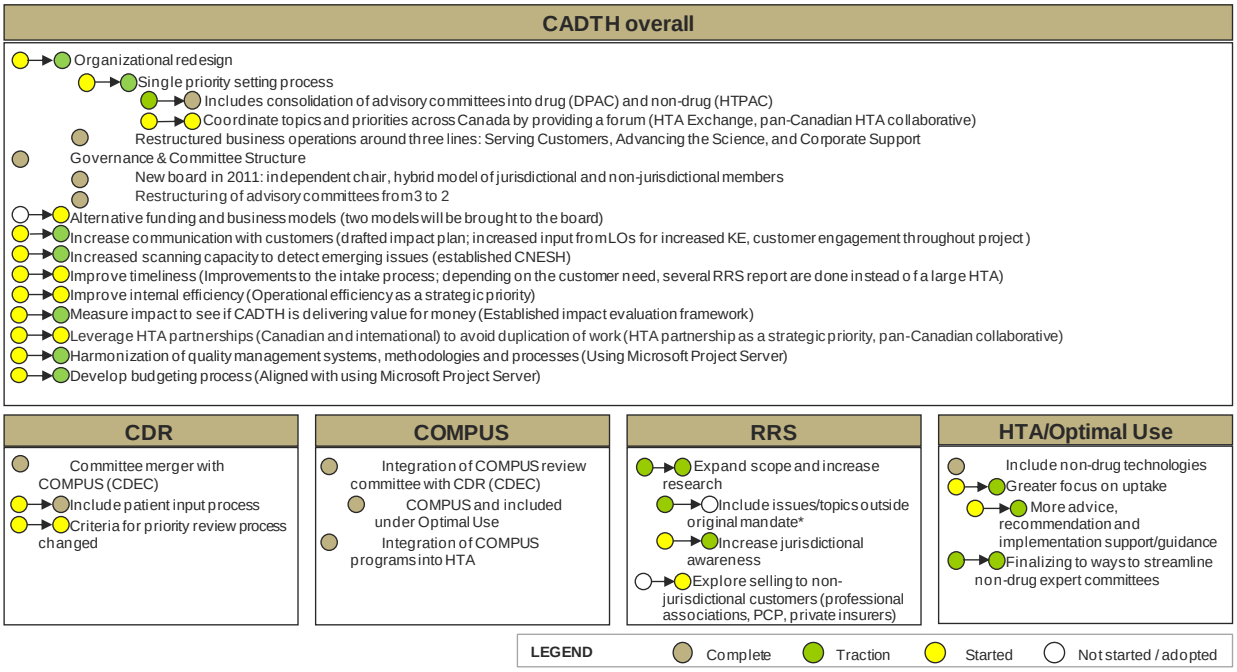
A simple framework was developed from the Phase 1 Evaluation that mapped the portfolio of transformation initiatives at the CADTH overall level, and for each of the product lines. Traffic-light colour codes were used to demonstrate the progress of each initiative, as per the following scheme:

- ○ = not started (not considered, or considered but decided not to pursue)
- ○ = started (there has been dialogue on the issue; started to develop or have developed strategy documents)
- ○ = traction (generally means implementation started; the strategy has been put into practice)
- ○ = completed

The inputs to this analysis include interviews with internal and external stakeholders and review of CADTH internal strategy and business-planning documents.

## Key Findings

Overall, CADTH has made significant strides over the last eight months since the initial review in fall of 2011. Traction has been gained on nearly half of the initiatives — on both strategic and operational fronts — and nearly half are complete or deprioritized.



On the strategic front, for example, CADTH has completed many objectives set out in organization redesign. CADTH has mapped out the process for the Central Intake process and has put it into practice since the autumn of 2011 and has been making adjustments to the process when required.

On the operations front, for example, CADTH has continued to use its IT capacity to improve the overall management of projects.

As per one of the recommendations given in the Phase 1 Evaluation, CADTH has been actively communicating the transformation objectives both internally and externally. During some Phase 2 Evaluation interviews, stakeholders have noted the change at CADTH without prompting. CADTH has consistently communicated with its staff to emphasize the goals and progress of the organizational transformation, as well as its recently developed customer service strategy.

# 4 Value-for-Money Analysis

## 4.1 CDR Value-for-Money Assessment

### Methodology

The value generated by the CDR product line was assessed at three levels: meeting CDR objectives, impact on drug plan management, and impact on broader health care system (see schematic below). Insights were distilled for the key questions outlined below. Any additional themes not included in the key questions but that come up repeatedly in interviews, publication scanning, and case studies were also synthesized.

The inputs to this analysis included:

- Interviews with plan managers (from six jurisdictions), key informants (revisited interview notes from the Phase 1 Evaluation; key informants include patient groups and industry, and previous CEDAC members) and CDR subject matter experts (SMEs)
- Wyatt CDR tracker for quantitative analysis
- Five in-depth case studies of drugs that had different listing recommendations from the CDR, and different listing decisions by local jurisdictions (see table below)
- Ten external publications evaluating CDR — grey and published literature, news articles, and industry and patient group perspectives *(please see "Sources" in the Appendix for details on the publications used)*:

| *Level of value-add* | **CDR Objectives** *(Within CADTH's control)* | **Impact on drug plan management** *(Indirect)* | **Impact on broader healthcare system** *(Indirect)* |
|---|---|---|---|
| ***Key questions*** | 1. Has CDR met its objectives?<br>• **Reduce duplication**<br>• Provide drug plans **equal access to data**<br>• Submission filing **process consolidation** | 1. How has CDR impacted:<br>• Jurisdictions' **listing decisions**<br>• **Cost containment** strategies, specifically the negotiation position<br>• **Time to listing**<br>• **Congruency** in listing<br>• **Access** to drugs<br>• **Reimbursement** policy<br><br>2. What is the **impact of resubmissions**?<br><br>Case Studies<br>3. Why did the jurisdictions follow and not follow CDR recommendation?<br>4. For case studies, how has CDR impacted :<br>• **Cost containment strategies** (specifically negotiation position), timelines to listing, congruency in listing, reimbursement policy | 1. How has CDR impacted **sustainability and efficiency** of the healthcare system?<br>• What is the implication of the **pan-Canadian model**?<br><br>2. (if data / resource readily available) What is the impact on the broader healthcare system pre and post CDR?<br><br>Case Studies<br>3. What is the impact on patients, and practitioners?<br>• Timelines to listing<br>• Reimbursement policy<br>4. **For case studies** (depending on the information available), what's the health and economic impact for each selected jurisdiction? |
| ***Key analyses conducted*** | • Interviews (drug plan managers)<br>• Literature review<br>• Revisited material from Phase I | • Interviews (drug plan managers)<br>• Literature review<br>• Wyatt CDR Tracker quantitative analysis | • Interviews (drug plan managers)<br>• Literature review |

The following table provides additional context on the five drugs selected for case studies:

| Drug | CDEC Recommendation | CDR Recommendation Issue Date |
|---|---|---|
| **Altace HCT** | List | 2007 06 14 |
| **Intelence** | List with criteria | 2008 08 14 |
| **Lucentis** | List with criteria | 2008 03 27 |
| **Invega** | Do not list | 2008 05 28 |
| **Multaq** | Do not list | 2010 05 27 |

The selection criteria for case studies include:

- At least one of each type of CDR recommendation: list, list with conditions, do not list
- At least one interviewed jurisdiction followed CDR recommendation; at least one did not follow (expect for the case of Altace HCT)
- Sufficient time has elapsed for jurisdictions to make drug-listing decisions.

Six jurisdictions were consulted to investigate the rationale behind the listing decision for each case study, representing large and small, national and provincial, and east and west drug plans. They were: Alberta, British Columbia, New Brunswick, Non-Insured Health Benefits (NIHB), Nova Scotia, and Ontario.

# Key Findings

## Is CDR Delivering against its Core Objectives?

Three objectives were set out for the CDR when it was established:

- Reduce duplication of reviews by jurisdictions
- Provide jurisdictions with equal access to data
- Consolidate the submission filing process for pharmaceutical companies.

Based on the analysis conducted for this evaluation, it is clear that CDR is delivering on the objectives set for the program. We provide in the table below a summary of the key strengths and challenges identified across each core objective. It is noted that several challenges are outside of CDR's direct control, but are important for CADTH and its network of stakeholders to be aware of; other challenges could be addressed by the CDR and are also noted here.

| CDR Objectives | Noted Strengths | Challenges |
|---|---|---|
| **Reduce duplication by jurisdictions** | Jurisdictions report that CDR has reduced duplication, allowing them to reduce/redirect resources.<br>Nearly all participating jurisdictions rely on CDR.<br>• Large jurisdictions (BC, AB, | *Outside of CADTH direct control:*<br><br>BC, AB, and NIHB invest resources in on-site review committees, but do not duplicate the up-front CDR work |

| CDR Objectives | Noted Strengths | Challenges |
|---|---|---|
| | NIHB) tend to have another committee that reviews drugs for local contextualization; activities include comparing new drug with existing drugs, reviewing and adjusting when applicable the recommended criteria for listing, and conducting price negotiation when applicable<br>• Atlantic provinces rely solely on CDR<br><br>Most third-party studies are consistent in stating that CDR has reduced duplication; however, there is noted room for improvement | In addition to local contextualization, some duplication of CDR work is still occurring in Ontario's secondary review; however, the drug plan has begun to actively manage the work, and is exploring ways to redirect resources. |
| **Provide jurisdictions with equal access to data** | Agreement that CDR provides participating jurisdictions with equal access to high-quality data on clinical review and critique of the manufacturer's submitted pharmacoeconomic data<br>• All jurisdictions have access to the same data set at the same time<br>• CDAC recommendation and patient input reports are sent to all drug plans | *Outside of CADTH direct control:*<br><br>Quebec currently does not participate in the CDR process |
| **Consolidate the submission filing process for pharmaceutical companies** | CDR has eliminated the need for full individual submissions to each jurisdiction by manufacturers | *Outside of CADTH control:*<br>However, several jurisdictions require additional manufacturer data (mostly budget impact data) for review. |
| **Improved the quality of drug reviews** | Smaller jurisdictions have noted a significant improvement in drug review quality compared with their own previous in-house efforts | *Within CADTH's control:*<br>In *few* occasions, secondary reviews surface new insights that CDEC " overlooked" (as noted by drug plan managers from large jurisdictions). Perhaps there is an opportunity for a feedback loop from jurisdictions post-review |
| **Improved transparency of the drug review process** | CDR communicates how reviews are performed to all stakeholders; stakeholders noted improved transparency<br><br>CDR has also played an important role in enabling drug plans to increase transparency of the review process | *Within CADTH's control:*<br><br>There is perceived lack of consistency of process in few cases where similar drugs receive different recommendations; one factor could be quality of data changes over time (more recent submissions may provide data that previous similar submissions did not). However, there is room for CDR to increase the clarity of reasons for CDR listing recommendations |

| CDR Objectives | Noted Strengths | Challenges |
|---|---|---|
| | | for similar drugs in the same class<br>Some clinicians and patients still perceive transparency is lacking; few practitioners (outside of CDEC committee) are aware of and understand the CDR process |

## Indirect Impacts of CDR on Drug Plan Management

Although CDR's original objective was not set out to impact drug plan management, a number of insights were identified:

| Key Insights | Noted Strengths | Challenges |
|---|---|---|
| **Provide credible, independent guidance to select high value-for-money medicine for the drug plan** | While providing negotiation leverage is not a part of CDR's objective, nor is it a part of the CDR methodology, CDEC's recommendations strengthen jurisdictions' negotiation power, given the objectivity of the third-party reviews<br><br>Inclusion of pharmacoeconomics supports value-for-money argument | However, CDR should not be positioned as a cost-cutting tool for jurisdictions that limits the patients' access to drugs.<br>Current perspective of some manufacturers and some patient groups — CDR is regarded as a cost-cutting lever for drug plans; there is an opportunity for CADTH to improve the communication about the objectives of CDR and the integrity of the methodologies it deploys |
| **Indirectly support congruency of listing** | CDEC recommendations create an even starting point for drug plans in their listing decision-making processes<br><br>Jurisdictions generally follow CDR recommendations<br>• Higher congruency in the Atlantic provinces<br>• To a lesser extent: ON, MB, BC | *Within CADTH's control:*<br>CDR has some insight into understanding root causes of incongruency; CADTH could establish methods to understand root causes for incongruency more systematically and actively report or track, and use the learnings to refine CDR processes<br>• CDR conducted a drug plan listing verification survey in October 2009 and obtained five general reasons why drug plans list otherwise; similar studies could be conducted more systematically to understand patterns of deviation, and whether any root causes are within CADTH's control<br>• CDR could invest more effort into communicating reasons such as PLAs, and high prevalence of off-label use, which drive differences in listing decision<br><br>*Not within CADTH's control:* |

| Key Insights | Noted Strengths | Challenges |
|---|---|---|
| | | Jurisdictional context limits CDR's ability to impact congruency, especially for drugs in the " grey zone," where cost savings or unmet clinical need are not as clear-cut<br>Select insights from case studies:<br>• In the case of Invega, large jurisdictions that have obtained a PLA were able to list the drug despite receiving a DNL recommendation<br>• BC listed Multaq for patients as a last-hope treatment due to high clinical unmet need, despite receiving DNL recommendation<br>• In some cases, off-label use can make drug spending hard to control, resulting in restricted or no listing; one exception is Avastin (oncology drug) whose controversial use off-label in place of Lucentis for the treatment of wet age-related macular degeneration is common practice due to significant cost savings gained over other alternatives |
| **CDR delivers within prescribed time frames** | Jurisdictions have stated that CDR delivers on a timely basis and meets expectations; jurisdictions also encouraged further improvement on timeline of the review<br><br>External studies have found that time-to-listing has generally decreased since the establishment of CDR, especially for smaller provinces, such as PEI; House of Commons report also recognizes that CDR is only responsible for time-to-listing up to the time of releasing CADTH report | *Not within CADTH's control:*<br>Differences in time-to-listing decision between jurisdictions remain; time from CDR recommendation to formulary listing varies significantly due to:<br>• Drug plan human resource constraints<br>• Budget cycles and other initiatives<br>• Complexity of certain reviews (technical, political)<br><br>*Within CADTH's control:*<br>CDR could establish further understanding on how to assist jurisdictions in harmonizing time-to-listing decision (i.e., in cases where they are repeating or validating CDR work, or further consolidate similar work that is being done in each jurisdiction) |
| **Resubmission process has strong integrity** | When more and/or higher quality evidence was received by CADTH, resubmissions received the same, if not more open listing recommendations<br><br>Jurisdictions (esp. Atlantic provinces) treat changed recommendations (from resubmissions and request for | |

| Key Insights | Noted Strengths | Challenges |
|---|---|---|
| | information) as new reviews<br><br>Jurisdictions do change the listing decisions when a different recommendation comes through. Drugs that received different recommendations through the resubmission process have received different listing decisions at participating jurisdictions. | |
| **Inconsistent views on impact of CDR on access to drugs** | Drug plan managers align and agree on how CDR has provided an objective way to better optimize how resources are allocated to provide patients access to medications within the budget available to the drug plan | *Somewhat within CADTH's control:*<br>For the drugs where benefits are " grey" (usually for incremental or " me too" drugs), there is a disconnect in the perceived value of the innovation between different parties: drug plan managers, patients and patient groups, health practitioners, manufacturers, and other players in the broader biomedical innovation ecosystem, including other ministries and federal governments and agencies. CADTH could have a role in managing market perception regarding CADTH's responsibility |

## Indirect Impacts of CDR on the Broader Health Care System

Although CDR's original objective was not set out to impact the broader health care system, some insights on this front were identified over the course of the review:

| Key Insights | Noted Strengths | Challenges |
|---|---|---|
| **Helps jurisdictions to optimize their resources within the drug plan** | Listing recommendations allow jurisdictions to allocate resources more efficiently and objectively<br>• Reimbursing drugs that are cost efficient and limiting access to others, based on evidence<br>• Reducing or eliminating resources needed for technology appraisals | *Not within CADTH's control:*<br>Although drug reviews consider health outcome and cost impacts across the broader health system, budgets for each component (i.e., drugs, hospitals, community care, primary care) are developed separately. That is, a given drug could be cost effective because it saves money in another part of the system; however, a drug plan budget is fixed — in order to fund the new technology, the budget should be transferred in from elsewhere. |
| **Provides a forum on pan-Canadian issues** | CDR offers jurisdictions a way to band together on pan-Canadian issues related to drug technologies<br>• E.g., talks are underway for a common pricing review; CADTH is being looked to for leadership on a national pharmacare plan | Stakeholders are clear that care should be taken to ensure that the primary mandate to independently assess drugs is not overshadowed by these collaborations (unless the mandate of CADTH or CDR explicitly changes) |

| Key Insights | Noted Strengths | Challenges |
|---|---|---|
| | and on cancer, rare disease, vaccines, hospital formularies, pharmacogenomics and convergence of drugs-devices | |

## Several Ideas for CDR's Next Evolution

There was a consensus that CDR is a stable product line that is operating well and adding value given the modest investment.

There was also a strong view that there are numerous issues in the drug landscape in Canada that require pan-Canadian leadership beyond the discrete basket of drug technologies that the CDR reviews.

There is an opportunity for individual jurisdictions to avoid major investments if frameworks and processes were devised centrally. There is a strong consensus that CADTH is the ideal body to address this need, given the depth of experience that CDR has compared with any other pan-Canadian health care program. Another key feature is the objectivity and neutrality associated with leadership by a pan-Canadian body.

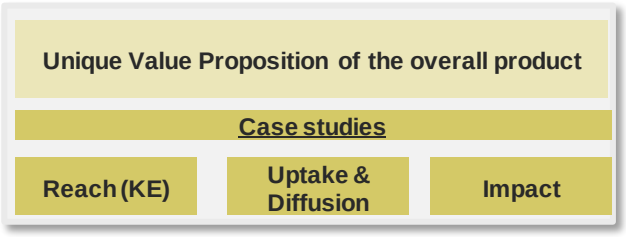
Key areas for potential leadership that were consistently raised in both phases of the evaluation include:

- **Oncology** — CDR is already taking on a portion of pCODR technology review overflow annually. Has the time come to merge the review processes, given the high volume of cancer drugs in the pipeline, and given that complex biologicals are already being reviewed via CDR?
- **Pharmacogenomics and/or personalized medicine** — There is a critical need for common decision frameworks for practitioners, health system funders, drug plans, and hospitals to make prescribing and reimbursement decisions based on genetic information or other biomarkers.
- **Appropriate use** — Evidence-based guidelines for right drug, dose, time, and delivery mechanism for existing medications, as well as therapeutic alternatives, are viewed to be as important as appraising new technologies, and are riddled with political challenges (hence, the neutrality of a pan-Canadian body is key).
- **National pharmacare** — Common frameworks for pricing, purchasing, reimbursement, and common inclusion and exclusion criteria for those who receive benefits.
- **Rare/orphan diseases, vaccines** — A common national framework for the review and reimbursement of these medications; many provinces are beginning to develop these frameworks now, so it would be timely to consolidate efforts.
- **Convergent drug-device technologies** — Beyond personalized medicine, a wave of new convergent technologies is on the horizon, ranging from nano-technologies to sophisticated medication adherence technologies.
- **HTA for private health plan sponsors** — There is an increasing focus on containing drug claim costs by employer sponsors of private drug benefits. They are increasingly seeking more sophisticated methods to value medications and align limited health benefit resources accordingly.
- **Hospital formulary** — Some hospitals have begun to use CDEC recommendations. While most hospitals have their own formularies, some jurisdictions have a more systematic approach; in NB, there is a single formulary for hospitals. There may be a role for CADTH to play in supporting hospitals to consolidate and manage their formularies.

## 4.2 Health Technology Assessment/ Optimal Use Value-for-Money

### Methodology

The HTA/OU product line was assessed at two levels, as depicted in the analytical framework below. The first was at the overall product level; the second was through the lens of case studies to evaluate how effective CADTH has been in terms of reach and knowledge exchange, uptake by decision-makers and ultimate diffusion of the technology, and impact on the health care system.




Key questions explored along each dimension:

- **Unique Value Proposition:** What is the unique value proposition of HTA/OU? Have the HTA/OU programs fulfilled the unique value proposition and/or the need? Where are gaps? Is CADTH's offering superior or inferior to others who provide a similar offering?
- **Reach (Knowledge Exchange):** Which (and how many) stakeholders have CADTH recommendations reached? Is CADTH reaching the right group of stakeholders? What mechanisms is CADTH using to disseminate information? Are these the right mechanisms? Is there a better way(s)?
- **Uptake and Diffusion:** How and to what extent has HTA/OU influenced policy decisions and technology purchasing decisions? How and to what extent has HTA/OU influenced clinical practice and diffusion of technologies?
- **Impact:** What is the impact of adapting HTA/OU recommendations on: 1. the efficiency and sustainability of the health care system; 2. the health outcomes and quality of life of patients and the broader public; 3. (if applicable) knowledge of HTA and evidence-based decision-making; 4. (if applicable) health care innovation and priority-setting?

The key inputs for the evaluation of the HTA/OU product line included:

- Interviews with customers, previous and current policy forum members and HTA exchange participants, and key thought leaders in the field
- Three in-depth case studies, including internal CADTH documents and data to support the case studies
- Insights from Phase 1 of the evaluation.

The case studies were selected based on the conditions that data are available within CADTH and related jurisdictions, and that sufficient time has passed in the given jurisdiction(s) to integrate CADTH recommendations into the health care system. Based on these criteria, the in-depth HTA/OU case studies were: the PPI project, SMBG project, and the magnetic resonance imaging (MRI) project. When applicable, data from jurisdictions that have used CADTH guidance were compared with data from jurisdictions that have not used CADTH guidance to explore the differences in impact.

## Context — HTA/OU is a Broad Product Line

While the Health Technology Assessment and Optimal Use (previously COMPUS) products are incorporated into one portfolio, challenges facing the uptake of drug versus non-drug HTA studies differ from one another in many respects. In most participating jurisdictions, there is a single (or selected few) unit(s) that makes decisions on drug listing and use. While on the non-drug side (non-drug includes practices, devices, and procedures), decision-makers sit at various levels within the health care system depending on the technology in question (e.g., ministry, regional health authorities, hospitals, outpatient centres, community-based centres), and each participating jurisdiction's setup is unique. This fragmentation of decision-makers and knowledge receptors creates a tremendous challenge for CADTH to systematically collect and prioritize topics and issues, and disseminate findings for optimal impact.

Where applicable, findings from HTA/OU VfM analysis will be grouped into three categories: 1. overall insights applicable to both drug and non-drug HTA/OU products; 2. insights applicable to drug-related HTA/OU products; and 3. insights applicable to non-drug–related HTA/OU.

## Key Findings

### Value Proposition of the HTA/OU Product Line

While strides have been made in the coordination of HTA activities in Canada and increasing the relevance and usability of HTA/OU reports, the HTA/OU product has a less stable positioning amongst stakeholders and customers, especially in contrast to CDR. There are several forces at play that are leading to this weaker value proposition. For one, the breadth of topics and individuals involved in the non-drug technology field is more complicated compared with drug-related issues; CADTH, as one organization in the complex system, simply has finite resources to drive traction in the system. Further, the timeline to making non-drug–related decisions is less systematic than the drug-listing decisions, and often requires more time for the system to realize and use the result of HTA reports. Further still, the bar for "value for money" is not high, given that the product line has a lower proportion of funds from participating jurisdictions versus Health Canada, compared with the CDR product line. And finally, although health care systems have become more advanced in applying evidence to decision-making, many decision-makers are still unfamiliar with the concept of HTA, and do not have the infrastructure and process to systematically request and receive HTA guidance.

If these key factors that make the value proposition of HTA/OU inherently challenging could be properly addressed, the maturity and importance of the HTA/OU portfolio could increase.

Additional notable strengths and challenges associated with the product line are summarized in the table below.

| Key Insights | Noted Strengths | Challenges |
|---|---|---|
| **New value proposition well received** | *Both drug and non-drug HTAs*<br>Stakeholders applaud the increasing focus on the "broker" value proposition for HTAs | |
| **Continuous improvement at CADTH** | *Both drug and non-drug HTAs*<br>Stakeholders are impressed with development of the product line since prior evaluations | |

| Key Insights | Noted Strengths | Challenges |
|---|---|---|
| **Inconsistent view on importance of HTA/OU product line** | *Both drug and non-drug*<br>Product line viewed as essential for jurisdictions that have receptor bodies<br>• *(Drug)* BC and NS have optimal use drug programs<br>• *(Non-Drug)* NL has a local HTA agency (CHRSP) that focuses on adding contextualization to CADTH HTA reports<br>– *"Don't think we can get by without it"* | *Both drug and non-drug*<br>Viewed to be "essential" to only a few jurisdictions<br>Other jurisdictions do not view the product as an essential service; *"nice to have"*<br><br>*Drug*<br>Drug plan managers expressed interest in continued investment in studies similar to therapeutic reviews |
| **Health care system has matured as a business model, and is ready for more HTA** | *Both drug and non-drug*<br>Health systems are more ready to incorporate HTA into decision-making — budget constraints are forcing the need for objective evidence to justify difficult trade-offs<br><br>Timely opportunity for CADTH to build up its HTA/OU shop now … in a strategically focused way | *Non-drug (but also applicable to convergent technologies and practices related to drug)*<br>Perspective from CADTH customers and key informants that there is disproportionately less expertise in how decision-making outside of drug plans is made vis-à-vis how formulary review recommendations work<br>• *"Execs have a pharma background, few with good experience in HTA"*<br><br>Lack critical mass — low volume of projects, lack of concentration in a narrow set of areas<br>• The Board sets a targeted number of HTAs per year due to resource constraint; however, customers have noted that CADTH is not producing enough HTAs *and* high-level Rapid Response reports |
| **Key factors affecting uptake**<br>• **Project prioritization**<br>• **Internal expertise in HTA/OU product line (HR and critical mass)**<br>• **Defined audience**<br>• **Awareness of product offering**<br>• **Timeliness** | *Both drug and non-drug*<br>Prioritization process has, in some instances, reduced duplication with other HTA producers<br>• Researchers search for HTA projects that have been completed by other HTA producers (provincial and international) in the project scoping phase before launching an HTA/OU or high-level Rapid Response project<br>• One of the objectives of pan-Canadian HTA collaborative is to create a webpage that shows what projects Canadian HTA agencies are currently working on | *Non-drug (but also applicable to convergent technologies and practices related to drug)*<br>Projects are not always the most relevant<br>• *"In many cases, Ontario and Quebec HTA agencies have done the topic we are investigating, more so than CADTH"* — HTA producer from another large jurisdiction<br>• Not always the right group of stakeholders at the Policy Forum table<br>• *"Not enough high-priority projects coming to Policy Forum"*<br>• Prioritization and project submission process lacks clarity to stakeholders outside of |

| Key Insights | Noted Strengths | Challenges |
|---|---|---|
| | Prioritization process is designed to receive input from various stakeholders in health care system and at CADTH<br>• Requests are received from various parties in the health care system: advisory committee, customers that LOs have contact with, professional networks and associations (e.g., Canadian Psychiatric Association), etc.<br>• Portfolio committee consists of members from each program and product line within CADTH, and members decide project by using a guiding criteria<br><br>Selective case studies have demonstrated that positive impact on the health care system can be achieved when practice is changed based on CADTH guidance | advisory committee and CADTH network, creating a barrier for potential customers who are not aware of CADTH's process to submit requests and topics<br><br>Lack of clearly defined audience for many projects, although analysis has shown CADTH projects started to have more focus in recent years<br>• Different projects touch a variety of levels and diverse audience types — little scale<br><br>While Liaison Officers in some jurisdictions are readily available to support customers in navigating the CADTH product portfolio, the promotion of CADTH products has mostly been a " push" effort instead of a " pull" effort (i.e., not a standard practice for key customers to have CADTH as top choice of information provider when decision needs to be made, *although with exceptions of few jurisdictions*).<br>Customers have mentioned that there is a lack of clear understanding or awareness of what CADTH offers or could offer from the " large reports" of HTA/OU portfolio, which could lead to low number of requests brought forth, and low number of customers search on CADTH database for relevant studies<br><br>Timeliness still an issue |

## Evaluation of Reach (Knowledge Exchange) of HTA/OU Projects

| Key insights | Noted Strengths | Challenges |
|---|---|---|
| **Examples of successful outreach exist; opportunity to further enhance dissemination** | *Both drug and non-drug*<br>Customers and stakeholders have noticed that key messages have become more clear and concise<br><br>Capacity-building programs are helpful<br>• Customers and stakeholders found it helpful for decision-makers to learn how to use HTA products<br>• Stakeholders appreciate the annual Symposium | *Non-drug (but also applicable to convergent technologies and practices related to drug)*<br>Still lack presence with high-level decision-making players (decision-makers at the ministry and regional health authorities)<br>• CADTH's value is not consistently known and explored by high-level decision-makers from various jurisdictions<br><br>Mixed opinions about the LO program<br>• LOs in some jurisdictions have |

| Key insights | Noted Strengths | Challenges |
|---|---|---|
| | *Case-specific observations*<br>(MRI) Good uptake was observed when significant proportion of effort is dedicated to interacting directly with key customers<br>(SMBG and PPI) For the OU projects, CADTH successfully leveraged local academic detailing groups to reach practitioners<br>(SMBG and PPI) Sufficient knowledge exchange tools were created to support outreach activities at jurisdictions | sufficient intimacy to the stakeholders<br>• Interviewees in some jurisdictions stated that they do not fully understand the value of the LO program<br><br>*Case-specific observations*<br>(SMBG and PPI) High number of individuals and practitioners were reached through CADTH outreach activities; however, not always at a high intimacy level |

## Evaluation of Uptake and Diffusion of HTA/OU Evidence

| Key insights | Noted Strengths | Challenges |
|---|---|---|
| **Case studies demonstrate clear potential for CADTH to support decision-making** | *Both drug and non-drug*<br>General agreement that CADTH reports have influenced decision-making and clinical practice to some extent<br>• Especially when the topic is relevant<br><br>*Case-specific observations*<br>(MRI) A key customer cited use of CADTH guidance in decision-making in the legislature<br>(SMBG) Multiple jurisdictions have used findings in various programs; e.g.,<br>• NB and NL used report to inform and support provincial diabetes strategies<br>• NS and BC used report in education and outreach programs<br>(SMBG) Findings accepted and applauded by patient, practitioner groups (Canadian Diabetes Association)<br>(PPI) Policy changes in a number of jurisdictions (NB, NS, NL, PEI, BC, and NIHB)<br>(PPI) Number of academic detailing programs and outreach programs from number of jurisdictions used findings (BC, AB, SK, NS, MB, NIHB) | *Both drug and non-drug*<br>Other barriers to impact have been stated in the value proposition section<br><br>*Case-specific observations*<br>(SMBG and PPI) High number of individuals and practitioners were reached through CADTH outreach activities; however, a lack of close familiarity with these individuals may have resulted in specific needs going unmet |

## Evaluation of Broader Impact of Adapting HTA/OU Evidence *(See Appendix for Detailed Data and Case Study to Support the Findings)*

| Key Insights | Noted Strengths | Challenges |
|---|---|---|
| **When projects are used, HTA/OU has impacted the broader HC system and public** | *Both drug and non-drug*<br>General agreement that CADTH has an impact on the Canadian health care system and the broader public<br>HTA/OU allows decision-makers to avoid pressure from device and drug companies<br><br>*Case-specific observations*<br>(SMBG) Jurisdictions that have adopted findings in clinical guidance have seen an impact on cost<br>• NS' spend on test strips has trended down (–4%); BC's spend on test strips has slowed down in growth (+3% vs. +7% from before)<br>• Canada's average growth of spend on test strip is +8.5%<br>(PPI) Decrease in spending on PPI drugs since the release of the report, while diffusion of PPI drugs has increased (improved access for patients)<br>(PPI) Increased efficiency in health care system as jurisdictions have simplified the reimbursement process for PPI drugs by listing them in the general formulary<br>(MRI) Indirectly contributed to potential savings of up to $8 million in New Brunswick, while creating no negative impact for patients<br>(MRI) Some issues subject to local context are out of CADTH's control, and this is recognized<br>• E.g., political issues such as equity of access to technologies between French and English regions | *Both drug and non-drug*<br>Recognition that the product line is still evolving its impact strategy<br>• *"HTA/OU has just begun to scratch the surface on the impact"* |

# 5 Targeted Review of HTA Practices

## Methodology

SECOR-KPMG reviewed peer agencies with features in common with CADTH from nine jurisdictions in order to identify practices that other agencies use to address challenges identified in the Phase 1 Evaluation for CADTH.

The agencies reviewed include:

- National Institute for Health and Clinical Excellence (**NICE**), United Kingdom
- The Swedish Council on HTA (**SBU**), Sweden
- Pharmaceutical Benefits Advisory Committee (**PBAC**), Medical Services Advisory Committee (**MSAC**), and Prostheses List Advisory Committee (**PLAC**), Australia
- Danish Center for Health Technology Assessment (**DACEHTA**), Denmark
- Scottish Health Technologies Group (**SHTG**) and Scottish Medicine Consortium (**SMC**)
- Norwegian Knowledge Centre for the Health Service (**NOKC**), Norway
- Ontario Health Technology Advisory Committee (**OHTAC/MAS**), Ontario
- Alberta Technologies Decision Process and Institute of Health Economics (**IHE**), Alberta
- L'Institut national d'excellence en santé et en services sociaux (**INESSS**), Quebec

Key issues from the Phase 1 Evaluation were used to frame the analysis of peer HTA agencies. The dimensions explored and the key questions included the following:

- Scope of mandate, approach to partnerships, and alliances:
  - How much priority is placed on being a facilitator or broker of health technology assessments (versus being a producer)?
  - Is the agency located in a decentralized health care system? If so, how does the agency structure its mandate and select projects to reflect health care system needs?
  - How does the funding provided reflect health system's priorities on evidence-driven approach to decision-making?
  - Does the agency have programs or initiatives in place to approach partnership and alliance strategically (especially with key stakeholders, including industry and manufacturers, local producers, other health and innovation agencies)?
  - If the agency has a product that provides recommendations on pharmaceutical coverage, how does the agency engage with industry and manufacturers?
- Approach to anticipating future needs:
  - Does the agency have a program or product similar to horizon scanning at CADTH? What are the initiatives to ensure that the agency is staying ahead of the curve and supporting the escalating demand?
  - How do customers gain visibility on the project pipeline?
  - Any initiatives or programs to resolve inconclusive evidence?
- Uptake, impact, evaluation methods:
  - What are the agency's outreach programs?

- How does the agency measure impact?
- Has the agency encountered the timeliness issue? What are the methods to alleviate this issue?
- How does the agency ensure engagement of senior decision-makers?

- Product line–specific questions (if the agency has HTA/OU-like and CDR-like products):
  - CDR-like products: do the drug plans that use the agency's reports duplicate any work that has been completed? Are there any initiatives (e.g., formal or informal agreement) to produce products without duplication?
  - CDR-like products: does the agency include orphan and oncology in the portfolio? If so, how are they evaluated, as many of them have higher cost-to-QALY (quality-adjusted life-year) ratio?
  - HTA/OU-like products: what are the presentation formats of findings? What programs or initiatives are in place to ensure decision-makers understand the implication of report findings?
  - HTA/OU: any initiatives or programs in place to support contextualization of HTA findings for different regions?

The inputs to this analysis include agency websites, relevant literature and publications, and interviews with SMEs from the United Kingdom, Australia, Scotland, Ontario, and Alberta.

## Key Findings

As would be expected, foundational differences in each agency's mandate explain why significant differences exist (e.g., proximity to the health care system, products and services, expectations for impact). Despite this, most of the agencies mirror CADTH in their approach to their business model, and most experience (or have experienced) many of the challenges identified in Phase 1 and 2 of the evaluation. Indeed, we learned that many of the agencies have turned to CADTH to observe and learn of its practices.

However, there were some learnings extracted about practices from which CADTH could draw inspiration as part of its ongoing improvement efforts. The practices below are not necessarily the best practices, and SECOR-KPMG does not recommend that CADTH adopt all practices outlined in the following section. Rather, the spirit was to validate many initiatives CADTH already has in flight, and to compile practices for additional reference.

### Approach to Partnerships and Alliances — Key Learnings

- Collaboration with other HTA agencies
  - Some agencies have formal collaboration mechanisms in place
  - e.g., NICE and SME — share multiple technology assessments (MTAs)
- Stakeholder engagement
  - Various frameworks to support stakeholder input at a high level
  - e.g., SBU — collaboration with patient associations, special interest groups, regional representatives, local experts, other interested parties
  - NICE philosophy: to be accountable for " reasonableness" ; therefore, need to engage all stakeholders to be reasonable

## Approach to Anticipating Future Needs — Key Learnings

- Horizon scanning:
  - Agencies have different views on the value of a horizon scanning function
  - Australia, instead, focuses on scanning for large issues that will likely shift the landscape (e.g., dedicated resource to understand how co-dependent technologies will impact the review process for different advisory committees, and how PBAC, MSAC, and PLAC will need to work together in the future
  - Some agencies have drug-specific horizon scanning functions. For example, SMC — an annual "Forward Look" report is sent in strict confidence to key Health Board personnel; it is produced based on confidential information from manufacturers.

## Approaches to Encourage Uptake and Impact — Key Learnings

- Outreach activities
  - Agencies have LO-like programs, and embed "Champions" in the field who are clinical leaders/influencers
  - E.g., SHTG — Liaison Coordinators in each local health board to promote SHTG's work; liaison coordinators are usually senior clinicians within the board
  - E.g., NICE — "Forward-planning" tool with summaries of recommendations, cost implications, and type of care impacted
- Usability of products and tools
  - DACEHTA — "mini-HTA" is an operational-oriented tool that allows decision-makers at a local level to use based on local situation; mini-HTA is increasingly obligatory input when hospitals consider or plan new provisions or acquisitions.

## Evaluation of Impact of the Agency — Key Learnings

- Evaluation methodologies:
  - Some agencies have interesting ongoing evaluations
    - E.g., OHTAC — tracks the diffusion rate of the majority of technologies reviewed at the regional health authority level; diffusion rate is used as a proxy for evidence uptake.

## Product-Specific Learnings — CDR

- Inclusion of oncological and orphan drugs
  - Both NICE and SMC include oncology drugs and orphan drugs in the portfolio
  - SMC applies different decision modifiers to these drugs
  - NICE has a further defined patient population
- Cost recovery model
  - Manufacturers pay a submission fee to PBAC in Australia.

## Product-Specific — HTA/OU

- Insufficient evidence
  - Some agencies conduct preliminary research to determine whether enough information is available before committing to a full HTA assessment
- Trend of shifting to multiple technology assessments from discrete technology assessments
- Clearly defined audience and purpose
  - E.g., Australia MSAC has distinct processes resource allocations for three types of reviews: submission-based report, contracted report, and government -initiated reviews
  - E.g., OHTAC — Resources are allocated top-down in a strategic way based on different groups of customers (i.e., Ministry of Health, requests from the system, other and ad hoc requests).

# 6 Recommendations

Most of the findings from this phase of the evaluation already map to the recommendations from the Phase 1 Evaluation (with the exception of one new recommendation). Therefore, instead of providing a new set of recommendations, SECOR-KPMG reviewers assessed progress to date on Phase 1 recommendations, and brought forward additional insights where applicable.

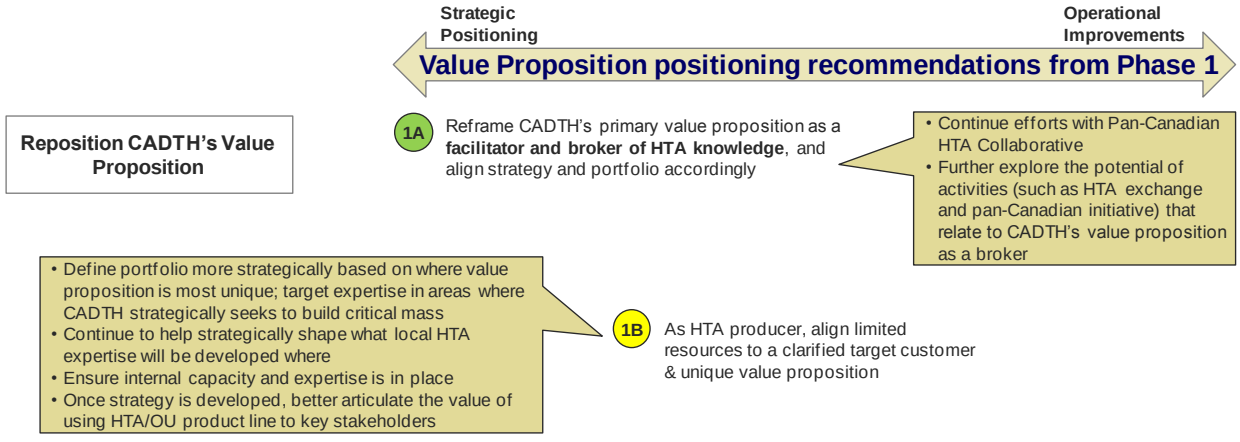
## Methodology

Each chart below represents initial recommendations from Phase 1 along a number of topics or dimensions. For each chart, the status of action against each recommendation was noted using a traffic-light scheme, and call-out boxes were added where new insights or ideas emerged as a result of the Phase 2 Evaluation.

- ○ = not addressed (not considered, or considered but decided not to pursue)
- ○ = started (there has been dialogue on the issue; begun to draft or have already developed strategy or business plan documents)
- ○ = traction (generally means implementation or change initiated)
- ○ = completed

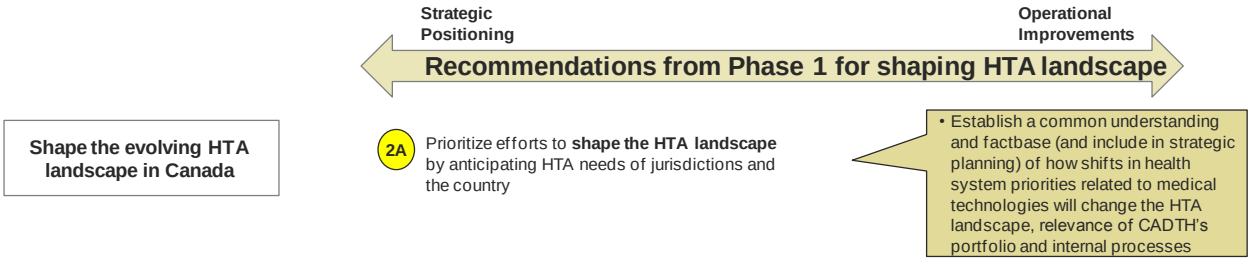
## Recommendations: CADTH Value Proposition

CADTH has made significant progress in articulating its dual value propositions as a producer and broker of HTA in a more balanced and transparent way. However, a renewed strategy and positioning for the HTA/OU portfolio is needed to ensure resources are allocated to most unique value-adding role that CADTH can play, given the limited resources available for this product line.



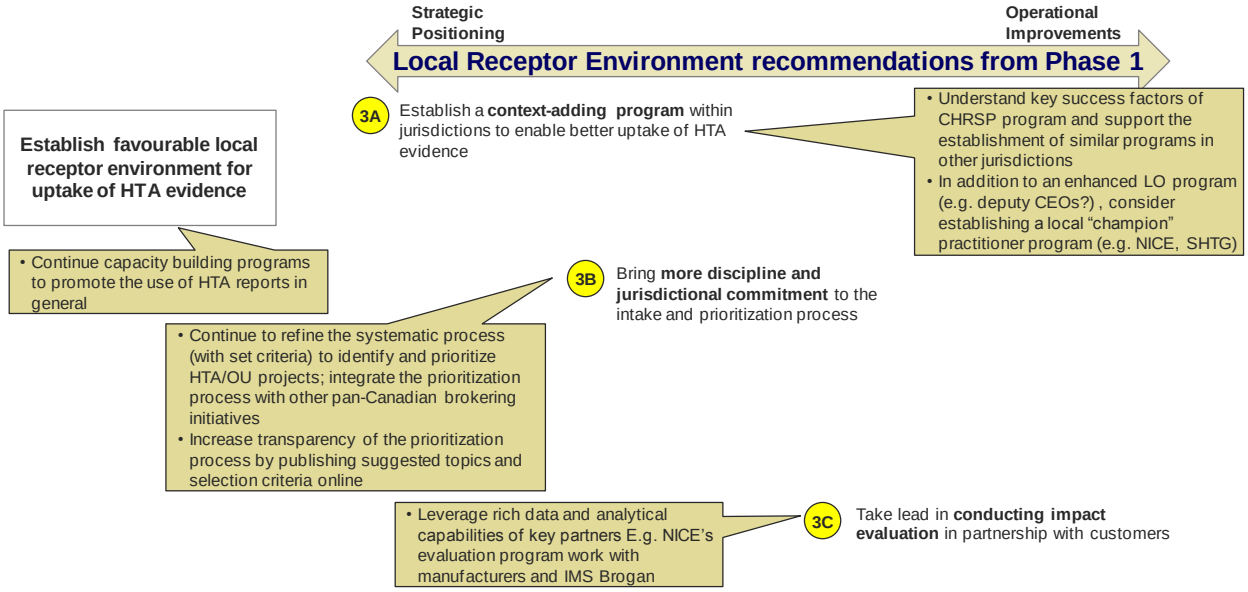

## Recommendations: Shaping the Health Technology Assessment Landscape in Canada

CADTH has initiated several landscape-anticipating or shaping efforts, such as the pan-Canadian HTA Collaborative and CNESH (Canadian Network for Environmental Scanning in Health). As those efforts begin to materialize, CADTH could consider shifting focus on redefining its own products, service offerings, and internal processes to align with the landscape-anticipating or shaping strategies.




## Recommendations: Establishing a Favourable Local Receptor Environment

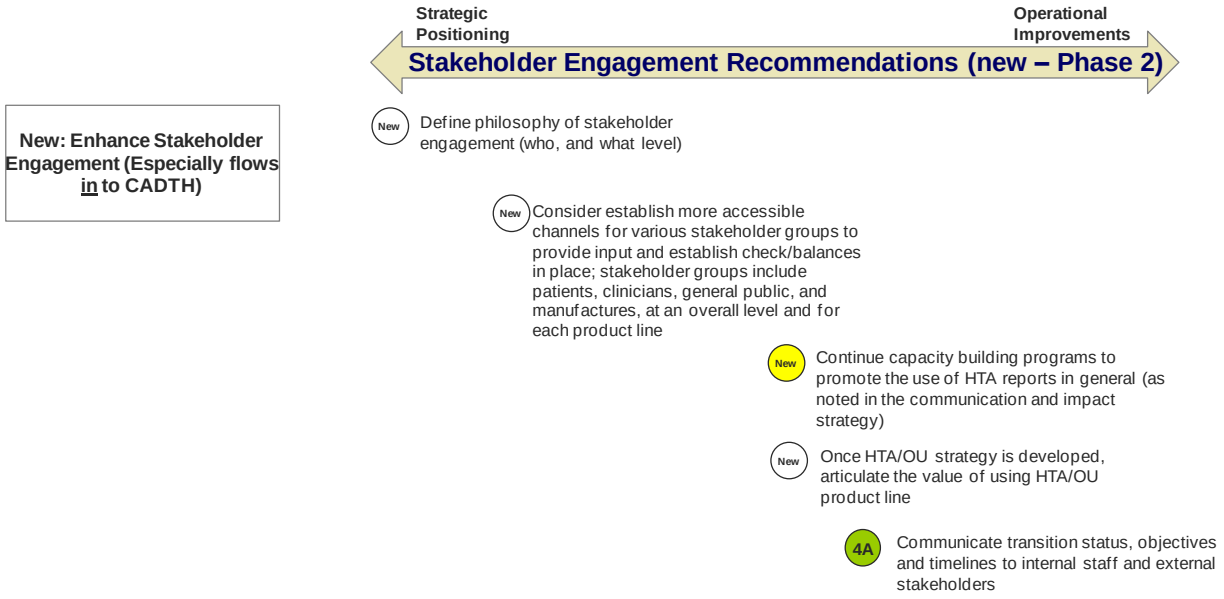
Since the Phase 1 Evaluation, CADTH has initiated a number of activities to promote better uptake of HTA evidence by local receptors. These include strategies on outreach and customer service. BC has consulted with CADTH in developing and operationalizing its HTA group. As CADTH gains more positive momentum on this front, the agency could explore and pursue more aggressive initiatives that were tabled in Phase 1 and augmented here.




## Recommendations: Enhance Stakeholder Engagement (new)

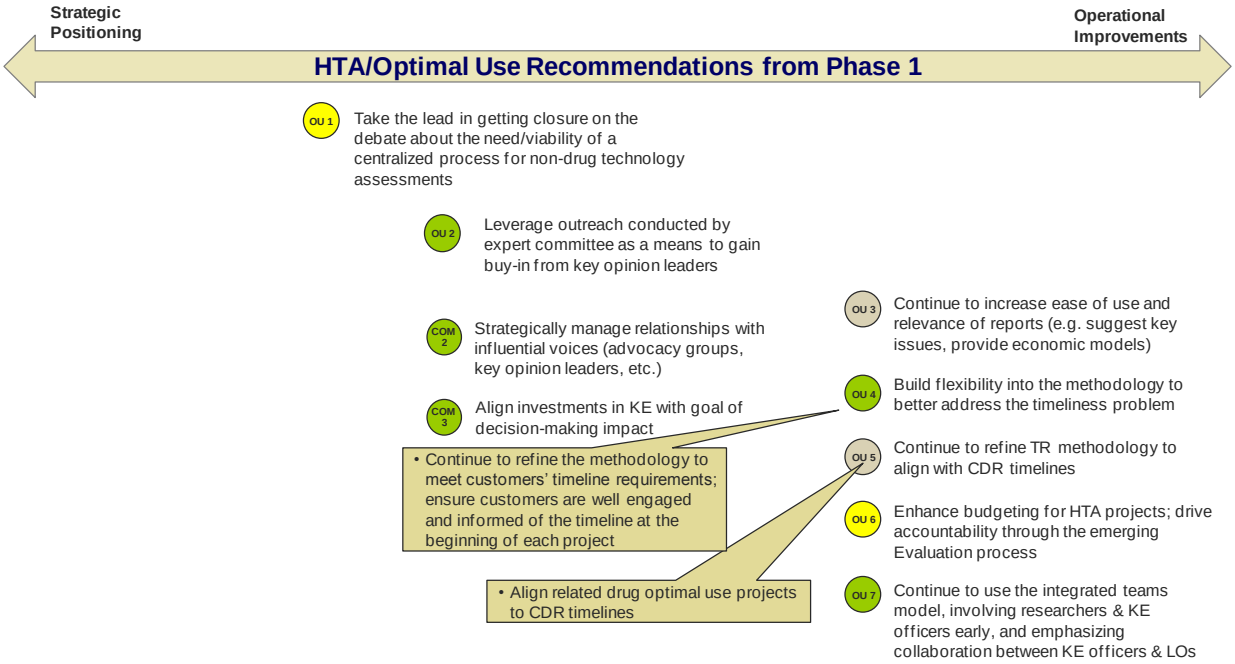
CADTH has made meaningful progress against strategies to improve impact, customer service, and communication. In addition to focusing on the outflow of information, CADTH should also consider and redefine parameters for stakeholders to provide input on a strategic and product line level as part of its continuous improvement efforts.

CADTH's role with the various stakeholder groups should be part of its value proposition and mandate. CADTH should revisit its value proposition and core activities to refine the level of engagement needed with some stakeholder groups. Given that the health care " ecosystem" is composed of all levels of stakeholders, CADTH's current setup is distant from some stakeholder groups — namely, patients and practitioners (outside of formal committees), and it is difficult for these stakeholders to provide input. CADTH could establish more accessible channels in order to increase transparency and facilitate dialogue.




## Recommendations — Health Technology Assessment/ Optimal Use Product Line

The key recommendations that would impact the HTA/OU offering have already been covered in the sections above (i.e., related to value proposition and impact or uptake). Several of the more specific, more tactical HTA/OU recommendations listed here have and will be addressed via CADTH's continuous improvement plans.

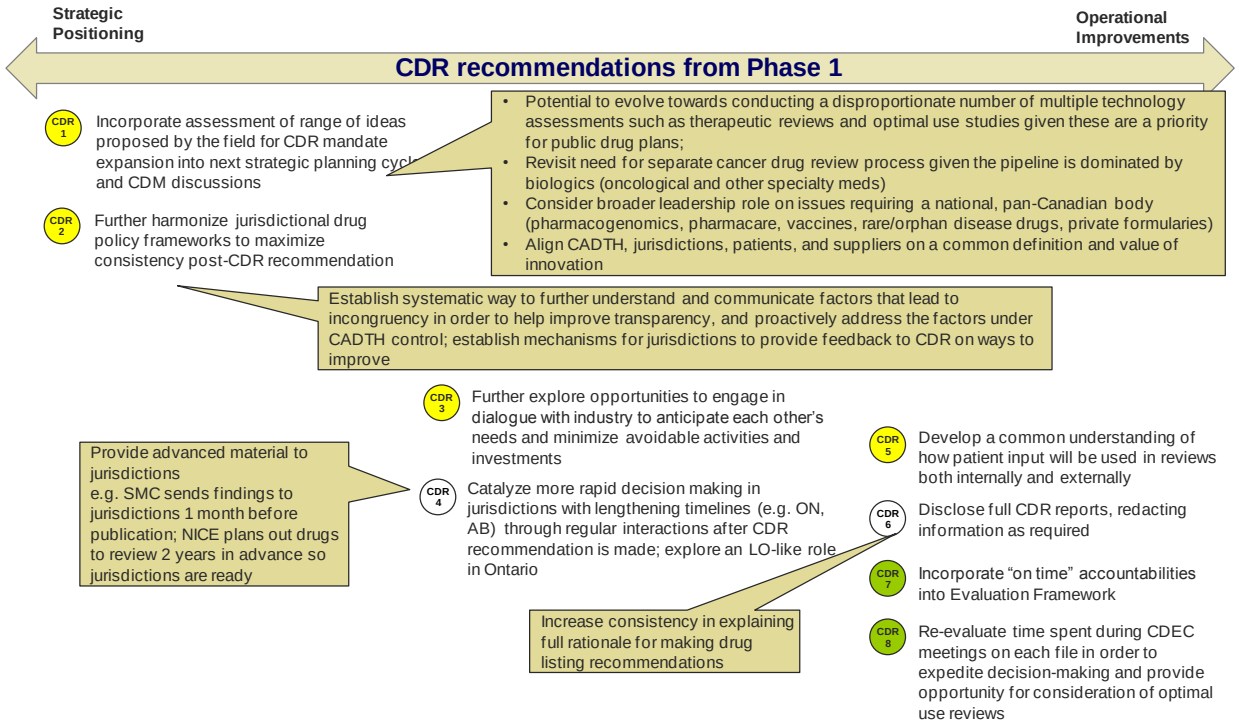



## Recommendations — Common Drug Review Product Line

Progress against the initial CDR recommendations from Phase 1 has been gradual, as many were strategic in nature and would require agreement from multiple parties beyond CADTH (i.e., ideas for expansion of CDR into adjacent drug-related HTA issues).

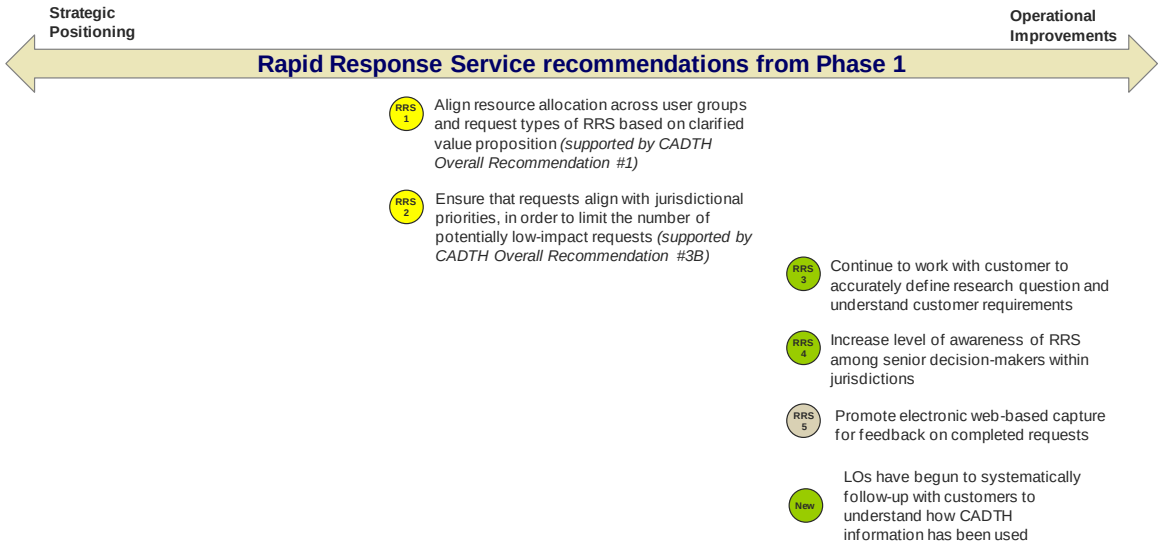
Additional opportunities for improvement emerged from this evaluation:

- Establishing a systematic way to understand factors that lead to incongruency and proactively address the factors under CADTH control
- Increasing consistency in explaining full rationale for drug-listing recommendations through methods such as establishing a systematic framework.




## Recommendations — Rapid Response Service

As noted in the Methodology section of this report, the Rapid Response Service was out of scope for this phase of the evaluation. However, SECOR-KPMG did review progress on the suite of recommendations made in Phase 1. As illustrated below, current efforts are focused on getting the right customer and the right information to ensure RRS' relevance in impacting key decision-making.



# 7 Acknowledgements

The SECOR review team is appreciative of the contributions and commitment of several CADTH staff and stakeholders who helped along all stages of the review process. They include:

**Evaluation Steering Committee**

- Abby Hoffman (Assistant Deputy Minister, Health Policy, Health Canada)
- Barbara LeBrun (Director, Office of Pharmaceuticals Management Strategies, Health Canada
- Lynda Jobin (Vice-President, Corporate Services, CADTH)
- Karen Lee (Director, Health Economics, CADTH
- Andrew Dzuba (Evaluations Advisor, CADTH)
- Stephanie Smith (Liaison Officer, New Brunswick, CADTH)

**CADTH Subject Matter Experts (internal management and staff)**

- Brian O'Rourke
- Glenna Benson
- Matthew Brougham
- Tammy Clifford
- Denis Belanger
- Janet Crain
- Elaine MacPhail
- William Amegatse
- Rhonda Boudreau
- Lisa Farrell

**CADTH Stakeholders**

More than 20 thought leaders, customers, and subject matter experts who participated in interviews and helped gather local data on technology diffusion.

# 8 Sources

## CADTH Documents and Data

| Section | Data |
|---|---|
| **Overall** | • CADTH website<br>• CADTH Phase 1 Evaluation Report & Sources<br>• Management Response to Phase 1 Evaluation (Draft)<br>• CADTH Internal Strategy Documents<br>  ○ CADTH Partnership Strategy<br>  ○ CADTH Impact Strategy<br>  ○ CADTH Customer Service Strategy<br>  ○ CADTH Corporate Communication Plan<br>  ○ CADTH Knowledge Mobilization/Implementation Strategy<br>  ○ CADTH LO Program Work Plan |
| **CDR VfM Analysis** | • 2007-2010 data on reviews by type of submission, by type of recommendation |
| **HTA/OU VfM Analysis** | • CADTH HTA/OU database from 2007 to 2012<br>• Impact documents<br>  ○ Citation databases<br>  ○ Tracking of COMPUS Impact Activities 2009-2011<br>  ○ CADTH HTA Impact Database 2011<br>  ○ Uptake, Impact and Challenges documents<br>  ○ Tracking of PPI listing status<br>• Final CADTH project reports: MRI, SMBG, PPI |

## External Sources

| Section | Data |
|---|---|
| **Overall** | • Independent Assessment of CADTH, John Wright (2009) |
| **CDR VfM Analysis** | • AstraZeneca. (2005). The Common Drug Review: Faster access or more red tape? Retrieved July 30, 2012, from AstraZeneca: http://www.astrazeneca.ca/documents/en/aboutus/CommonDrugReview.pdf<br>• Attaran, A., Cartagena, R., & Taylor, A. (2011). The effectiveness of the Common Drug Review in Canada's National Drug Strategy. Halifax, NS: Atlantic Institute for Market Studies.<br>• B.C. Ministry of Health. (2010, November). The Drug Review Process in B.C. Retrieved July 30, 2012, from BC Ministry of Health: http://www.health.gov.bc.ca/pharmacare/outgoing/drugrevproc.pdf<br>• Canadian Diabetes Association. (2012). In the balance: A Renewed Vision for the Common Drug Review.<br>• Gamble, J.-M., Weir, D. L., Johnson, J. A., & Eurich, D. T. (2011). Analysis of drug coverage before and after the implementation of Canada's Common Drug Review. CMAJ.<br>• House of Commons Canada, Joy Smith, MP. (2007). Prescription Drugs Part 1 — Common Drug Review: An F/P/T Process.<br>• Kanavos, P., Nicod, E., Aardweg, S. v., & Pomedli, S. (2012). The impact of |

| Section | Data |
|---|---|
| | health technology assessments: an international comparison. Euro Observer.<br>• McMahon, M., Morgan, S., & Mitton, C. (2006). The Common Drug Review: A NICE Start for Canada? Health Policy.<br>• Ubelacker, S. (2011, October 24). Fewer drugs green-lighted by provincial plans after drug review begun: study. Global News.<br>• Wyatt Health Management. (2011). Wyatt Health Management reports that Common Drug Review (CDR) recommendations remain evenly split between Yes and No. Retrieved July 30, 2012, from Wyatt Health: http://www.wyatthealth.com/wp-content/uploads/cdr-tracker-news-release-final4.pdf<br>• Wyatt CDR Tracker Data 2007-2011 |
| **HTA/OU VfM Analysis** | • MRI case study<br>o Esmail, N. (2011). Old and outdated medical equipment. Fraser Forum<br>o New Brunswick data on age of MRI machines and planned replacement date<br>• SMBG case study<br>o BC and NS jurisdictional data on cost of test strips<br>o Gomes, T., Juurlink, D., Shah, B., Paterson, J. M., & Mamdani, M. (2010). Blood glucose test strips: options to reduce usage. CMAJ<br>o *(Manuscript)* Mansell, K. (2012) *Pharmacists Providing Education to Help Optimize Frequency of Self-Monitoring of Blood Glucose in Non-Insulin Dependent Type 2 Diabetes*<br>o Jenna Brown's presentation: Implementing Optimal Self-Monitoring of Blood Glucose in Patients with Type 2 Diabetes Not Managed with Insulin<br>o IMS Brogan data on cost of test strips<br>• PPI case study<br>o IMS Brogan data on PPI usage from 2005 to 2011 in jurisdictions BC, NB, NL, NIHB, NS, MN, ON, SK, AB, QC |
| **Targeted Review of HTA Practice** | • Overall<br>o Respective HTA agency websites, annual reports, and evaluation reports when available<br>o Menon D. (2011) *HTA: Lessons learned from the International Community*<br>o Charles River Associates (2011) *A comparative analysis of the role and impact of Health Technology Assessment*<br>o Sorenson C., Drummond M. and Kanavos P. (2008) *Ensuring Value for Money In Health Care*<br>o Drummond MF, Schwartz JS, Jonsson B, et al. (2008) *Key principles for the improved conduct of health technology assessments for resource allocation decisions. Int J Technol Assess Health Care*<br>• National Institute for Health and Clinical Excellence (NICE), United Kingdom<br>o Drummond M. Sorenson C. (2009) *Nasty or Nice? A perspective on the Use of HTA in U.K.*<br>o Sheldon, T., Cullum, N., Dawson, D., Lankshear, A., Lowson, K., Watt, I., et al. (2004). What's the evidence that NICE guidance has been implemented? BMJ.<br>• Pharmaceutical Benefits Advisory Committee (PBAC), Medical Services Advisory Committee (MSAC), and Prostheses List Advisory Committee (PLAC), Australia<br>o MSAC process map |

| Section | Data |
|---|---|
| | • Danish Center for Health Technology Assessment (DACEHTA), Denmark<br>  ○ Sigmund, H., & Kristensen, F. B. (2009). Health technology assessment in Denmark: Strategy, implementation and developments. International Journal of Technology Assessment in Health Care<br>• Scottish Health Technologies Group (SHTG) and Scottish Medicine Consortium (SMC)<br>  ○ Ken Paterson presentation: *Assessing a Technology with Limited Resources*<br>• Alberta Technologies Decision Process and Institute of Health Economics (IHE), Ontario<br>  ○ Borowski H., Brehaut J., and Hailey D. (2005) *Linking evidence from health technology assessments to policy and decision making: The Alberta Model.* International Journal of Technology Assessment in Health Care |

## Stakeholder Consultations

Thirty stakeholders consulted

| Stakeholder Group | Name, Title | Affiliation |
|---|---|---|
| **Customer and/or Committee** | Joan Berezanski<br>Executive Director, Alberta Health and Wellness | AB/Policy Forum |
| | Harold Boudreau<br>Pharmacy Consultant, Non-Insured Health Benefits Program, Benefits Management Division, First Nations & Inuit Health Branch | NIHB, Health Canada/DPAC |
| | Leanne Jardine<br>Director NB prescription Drug Program, Department of Health | NB/DPAC |
| | Deb Jordan<br>Executive Director, Acute & Emergency Services Branch, Saskatchewan Health | SK/Policy Forum |
| | Steve Long<br>Executive Director, Pharmaceuticals and Life Sciences Branch, Strategic Directions Division, Alberta Health and Wellness | AB/DPAC |
| | Eric Lun<br>Executive Director of Drug Intelligence, Pharmaceutical Services, BC Ministry of Health Services | BC/DPAC |
| | Diane McArthur<br>Assistant Deputy Minister and Executive Officer of Ontario Public Drug Program | ON/Board of Directors |
| | Judy McPhee | NS/DPAC |

| Stakeholder Group | Name, Title | Affiliation |
|---|---|---|
| | A/Director, Pharmaceutical Services Nova Scotia Department of Health and Wellness | |
| | Robert Shaffer<br>A/Executive Director, Provincial Drug Program<br>(previously) A/Executive Director, Health System Development | MN/DPAC, previously on the device side |
| | Suzanne Taylor<br>Executive Director, Drug Use Optimization British Columbia Ministry of Health Services | BC/DPAC |
| **Key informants** | Stephen Bornstein<br>Director, Memorial University of Newfoundland Health Science Centre | NL/HTA Exchange |
| | Tony Culyer<br>Professor/Research Chair, Health Policy, Management and Evaluation, University of Toronto | NICE |
| | Bob Nakagawa<br>Director of Pharmacy, Simon Fraser Health Region | BC/Former board member |
| | Logan Mardhani-Bayne<br>Managing Director of HTA international (HTAi) | HTAi |
| | John Sproule<br>Senior Policy Director, Institute of Health Economics | AB |
| **SME from peer agencies** | Meindert Boysen<br>Programme Director, Technology Appraisals | National Institute for Health and Clinical Excellence (NICE) |
| | Ailsa Brown<br>Health Economist | Scottish Medicine Consortium |
| | Laura Corbett<br>Manager, Medical Advisory Secretariat | Ontario Health Technology Advisory Committee |
| | Christa Harstall<br>Director, HTA, Institute of Health Economics | Institute of Health Economics (IHE)/HTA Exchange |
| | Andrew Mitchell<br>Strategic Adviser, Pharmaceutical Evaluation | Australia (PBAC, MSAC, PDC) |
| | Susan Myles<br>Lead Health Economist | Healthcare Improvement Scotland |
| **CADTH senior management** | Glenna Benson<br>VP Programs | CADTH |
| | Matthew Brougham<br>VP Products and Services | CADTH |
| | Tammy Clifford | CADTH |

| Stakeholder Group | Name, Title | Affiliation |
|---|---|---|
| | Chief Scientist | |
| | Lynda Jobin<br>VP Corporate Services | CADTH |
| **CADTH staff** | William Amegatse<br>Impact Analyst | CADTH |
| | Denis Belanger<br>Impact Director | CADTH |
| | Rhonda Boudreau<br>Theme Lead | CADTH |
| | Janet Crain<br>Knowledge Exchange Manager | CADTH |
| | Andrew Dzuba<br>Evaluation Advisor | CADTH |
| | Stephanie Smith<br>Liaison Officer | CADTH |

# Appendix 1 Interview Discussion Guides

## Interview guide for Drug Plan Managers for Common Drug Review (CDR) Value-for-Money (VfM) Analysis


**Interview questions**

1. What difference has the CDR made to your drug plan and associated stakeholders related to:
   - Reduce duplication
     - Do you have capacity to produce your own reviews?
     - Do you have a committee that reviews drugs? How much emphasis do you place on CDR's output when making listing decisions?
   - Provide drug plans equal access to data
   - Submission filing process consolidation

2. What would have been the drug approval process if CDR does not exist? Would you have paid for the service?

3. (if you have been involved in formulary management pre-CDR) How much and in what ways did you expect your drug plan to be impacted by CDR? Has CDR's performance to date been different/similar to your expectations?

4. What differences have been implemented to the drug approval process at your jurisdiction post-CDR?

1. What difference has CDR made to your drug plan related to:
   - Cost containment strategies, specifically negotiation position
   - Quality of listing decisions
   - Timelines to listing
   - Congruency in listing
   - Patient access to drugs
   - Reimbursement policy

2. If CDR has changed its initial recommendation (through resubmission or request for advice), how do you use the new information?

3. When there is a difference between CDR recommendation and formulary's listing decision, what are the main factors that drove the difference?

4. If other provinces have made a different listing decision from CDR's recommendation or your listing decision, what are the impacts (if there is any) on your drug plan?

1. What difference has CDR made to your drug plan related to:
   - Efficiency and sustainability of the drug plan
   - Collaboration and partnerships (with other drug plans)
   - Overall drug plan's service delivery and impact goals

2. How would you describe CDR's impact on:
   - The drug plan beneficiaries
   - The Canadian health system at large

3. Suggestion for CDR product improvements?

## Interview Guide for Customers/Key Informants for Health Technology Assessment/Optimal Use (HTA/OU) VfM Analysis

**Unique Value Proposition**

What is the unique value proposition of HTA/OU?

What would be the gap if HTA/OU does not exist?

Who provides similar offering? Better/worse?

Do you believe that you are receiving good value for money? In what way(s)?

What would you do if HTA/OU did not exist?

How much resource would you be willing to spend to produce a similar offering? How much would you be willing to pay for a similar product offering?

Why do/don't you gather HTA data from other producers in Canada or globally?

**1 Reach (KE)**

How do you find out about HTA/OU products? Do you think that is effective?

Do you find CADTH information comes at the right frequency?

Do you think CADTH is reaching the right group of stakeholders? How can CADTH do better at involving/reaching the right stakeholders?

How clear is the implication of HTA/OU reports for your day-to-day job?

**2 Uptake & Diffusion**

How and to what extent has HTA/OU influenced your policy decisions and/or purchasing decisions?

How and to what extent has HTA/OU influenced clinical practice?

How can and should HTA/OU do better at effectively informing/supporting decision making?

**3 Impact**

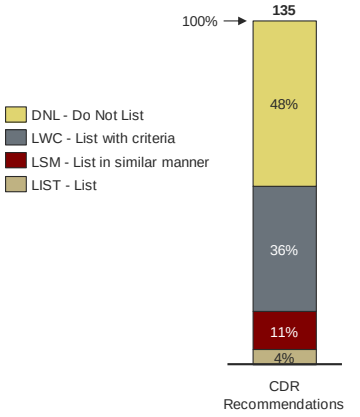
How has HTA/OU recommendations impacted:
- The efficiency and sustainability of healthcare system
- The health outcomes and quality of life of patients and broader public
- (if applicable) knowledge of HTA and evidence-based decision making
- (if applicable) healthcare innovation and priority setting

# Appendix 2 Common Drug Review: Highlights of Analysis

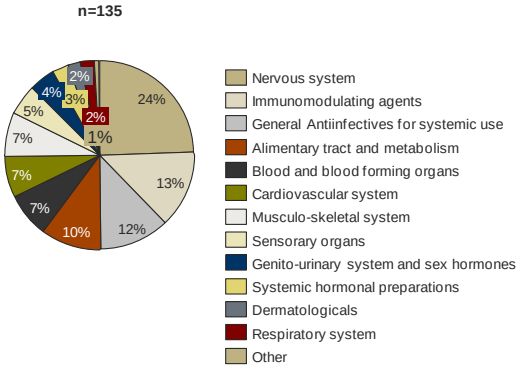
Common Drug Review (CDR) Reviews: Portfolio from 2007 to 2011

- CDR recommended list with criteria for 36% of drugs and do not list for 48% of drugs reviewed from 2007 to 2011
- 60% of drugs reviewed are in four therapeutic areas: nervous system, immunomodulating agents, general anti-infectives, and alimentary tract and metabolism

**Listing Recommendations of All Drugs Reviewed 2007-2011***
*2007-2011, Wyatt Tracker*




**Therapeutic Class of All Drugs CADTH Reviewed**
*2007-2011, Wyatt Tracker & WHO classification*



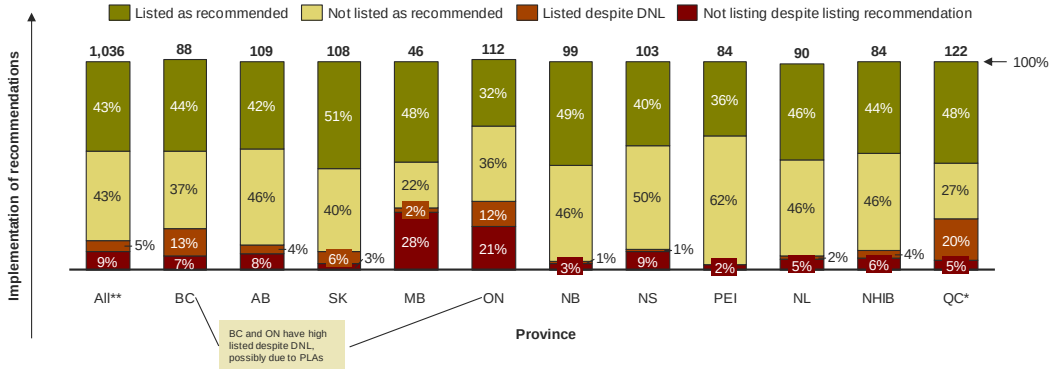

*Excluded all submissions under review, withdrawn, and recommendation not released

Congruence by Jurisdictions (source data: Wyatt CDR Tracker)

For the 135 recommendations from CDR:

- Congruence range from 68% (Ontario) to 98% (PEI)
- Between 2% (PEI) and 28% (Manitoba) of total listing decisions were not listed despite a listing recommendation
- *Note: not all jurisdictions have finished reviewing all 135 recommendations*

**Agreement between 2007-2011 recommendations made by the Common Drug Review and the decisions to list made by 11 Canadian public drug plans (Total of 135 recommendations from CDR[1])**
*Number of decisions*

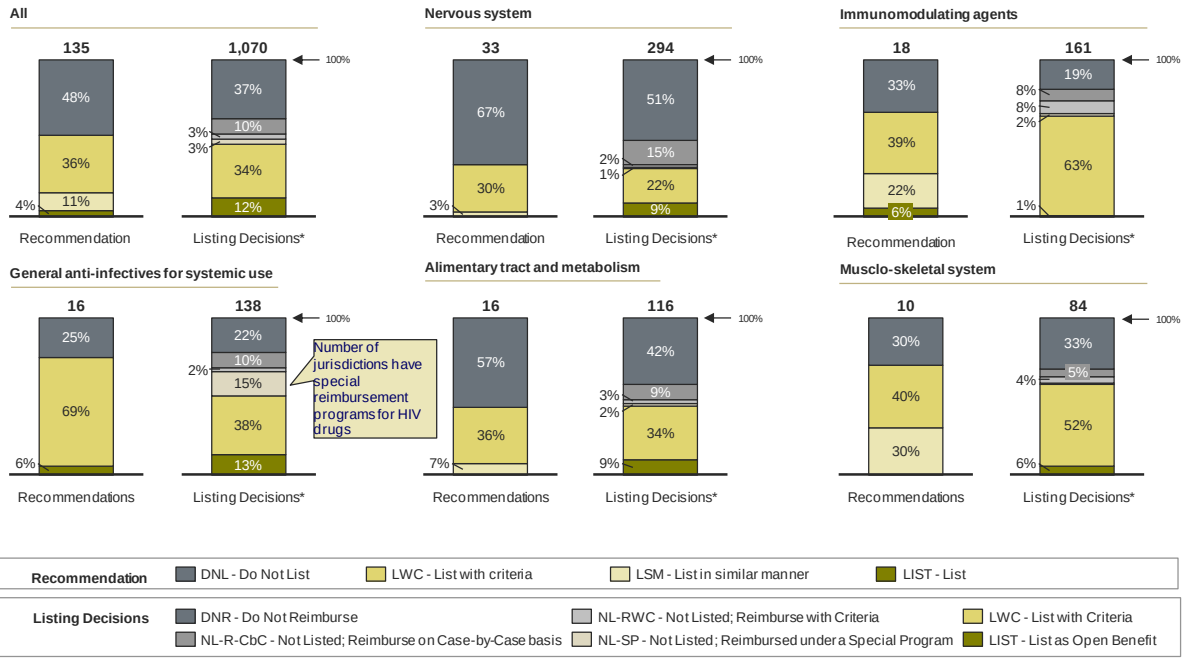



[1] Data points excluded reviews that are: not released (by CDR), under review (by CDR and by the drug plans), withdrawn (by manufacture), drugs listed in a special program, and removed from the market
*For reference only, Quebec does not participate in CDR
**Exclude Quebec

## Congruence by Therapeutic Areas

There is a strong congruency at the therapeutic area level

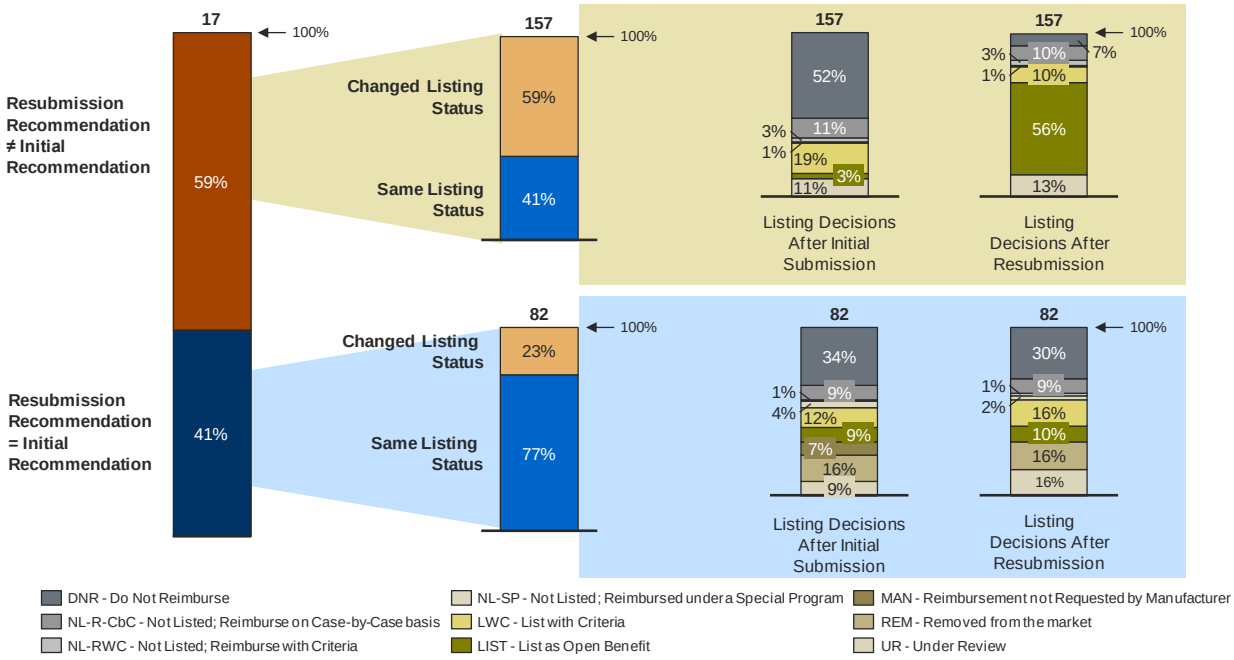
- More incongruency for anti-infectives, musculoskeletal system, and genitourinary system and sex hormone drugs (*not shown)*




** Excluded Quebec's listing decisions, reimbursement not requested by manufacturer, no submission filed, removed from the market, under review, and partial coverage (the plan reimburses a max. amt.)*

## Impact of Resubmission on Listing Decisions

- For the resubmissions that have changed the listing recommendation from the initial recommendation, jurisdictions follow the new recommendation
- Less change in listing status for resubmissions that received same recommendation as the initial submission




## Sample Case Study — Invega

- Jurisdictional context limits ability to impact congruency

**Context**

Drug: Paliperidone, the active metabolite of risperidone, is approved for the treatment of schizophrenia. Dosage form is extended release tablets.

CDR Recommendation: **Do not list** at the resubmitted price (confidential)

**Drug plan decisions and rationales**

**NIHB**

Outcome: **Not listed, request of reimbursement on exceptional basis**, still in the process of price negotiation

Rationale:
- Agree with CADTH's recommendation – Not listed - requests reviewed on a case by case basis

**BC**

Outcome: **Listed as open benefit** (obtained a PLA for this drug)

Rationale:
- BC did negotiate a PLA for this drug

**AB**

Outcome: **Did not list**

Rationale:
- Agreed with CEDAC recommendation
- The product in the injected form is listed with criteria

**NS**

Outcome: **Did not list**

Rationale:
- Agreed with CEDAC recommendation

**ON**

Outcome: **Listed as open benefit** (obtained a PLA for this drug)

Rationale:
- ON did negotiate a PLA for this drug
- Information system does not support listing with certain criteria

**NB**

Outcome: **Did not list**

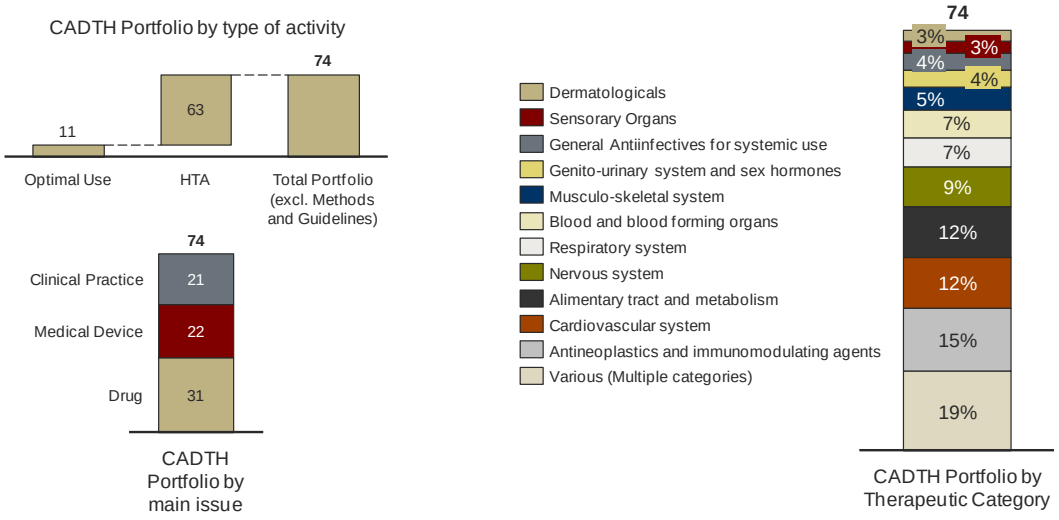
Rationale:
- Agreed with CEDAC recommendation

# Appendix 3 Health Technology Assessment/Optimal Use: Highlights of Analysis

## HTA/ OU Portfolio

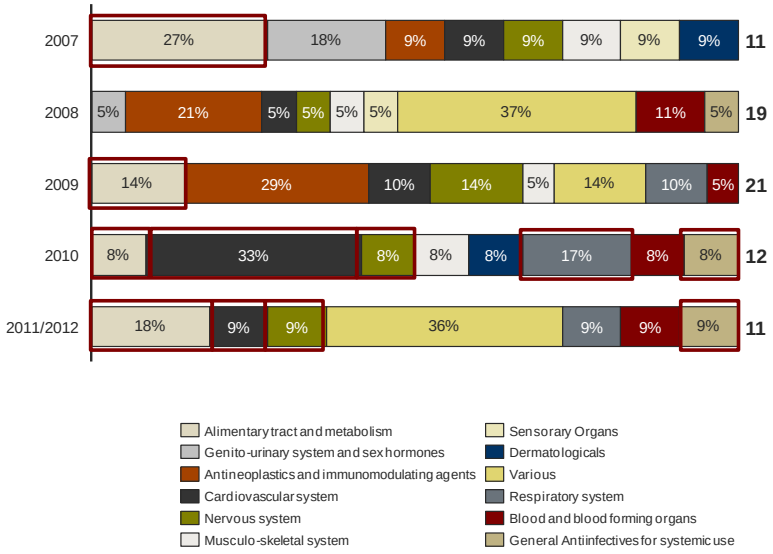
- 15% of the portfolio are Optimal Use projects, while the rest are HTA projects
- HTA/OU projects are almost an even split between clinical practice, medical device, and drug, with a slightly higher concentration on drugs (42%)
- 19% of reports review multiple therapeutic areas, 15% concern cancer- and immunology-related issues, 12% cardiovascular and alimentary and metabolism ones.

**CADTH non-drug technology projects by type and issue**
*(HTAs and Optimal Use reports included; Methods and guidelines excluded; March 2007 – June 2012)*




- Broad range of therapeutic areas covered year over year
- Projects have become more focused since 2010, when priority themes were established.

**CADTH non-drug technology reviews by therapeutic area, by year**
*(HTAs and Optimal Use reports included; Methods and guidelines excluded; March 2007 – June 2012)*



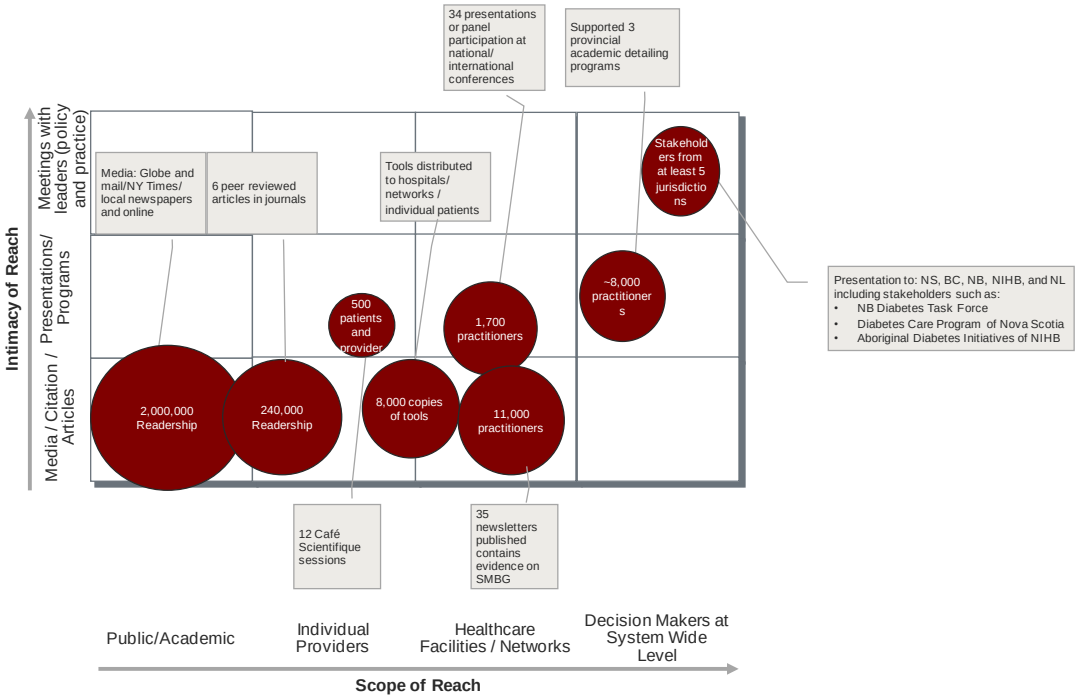

**CADTH Stated Priority Themes**

| |
|---|
| 2006-2007 proton pipe inhibitor (COMPUS)<br>2007-2009 Diabetes (COMPUS) |
| 2010-2011, 2011-2012 Mental Health<br>2010-2011, 2011-2012 Infectious Diseases<br>2010-2011, 2011-2012 Diabetes<br>2010-2011, 2011-2012 Cardiovascular<br>2010-2011 Thoracic/respiratory<br>2011-2012 Endocrine Disorders with a focus on Diabetes<br>2011-2012 Neurological Disease |

## Sample Case Study — Self-Monitoring of Blood Glucose

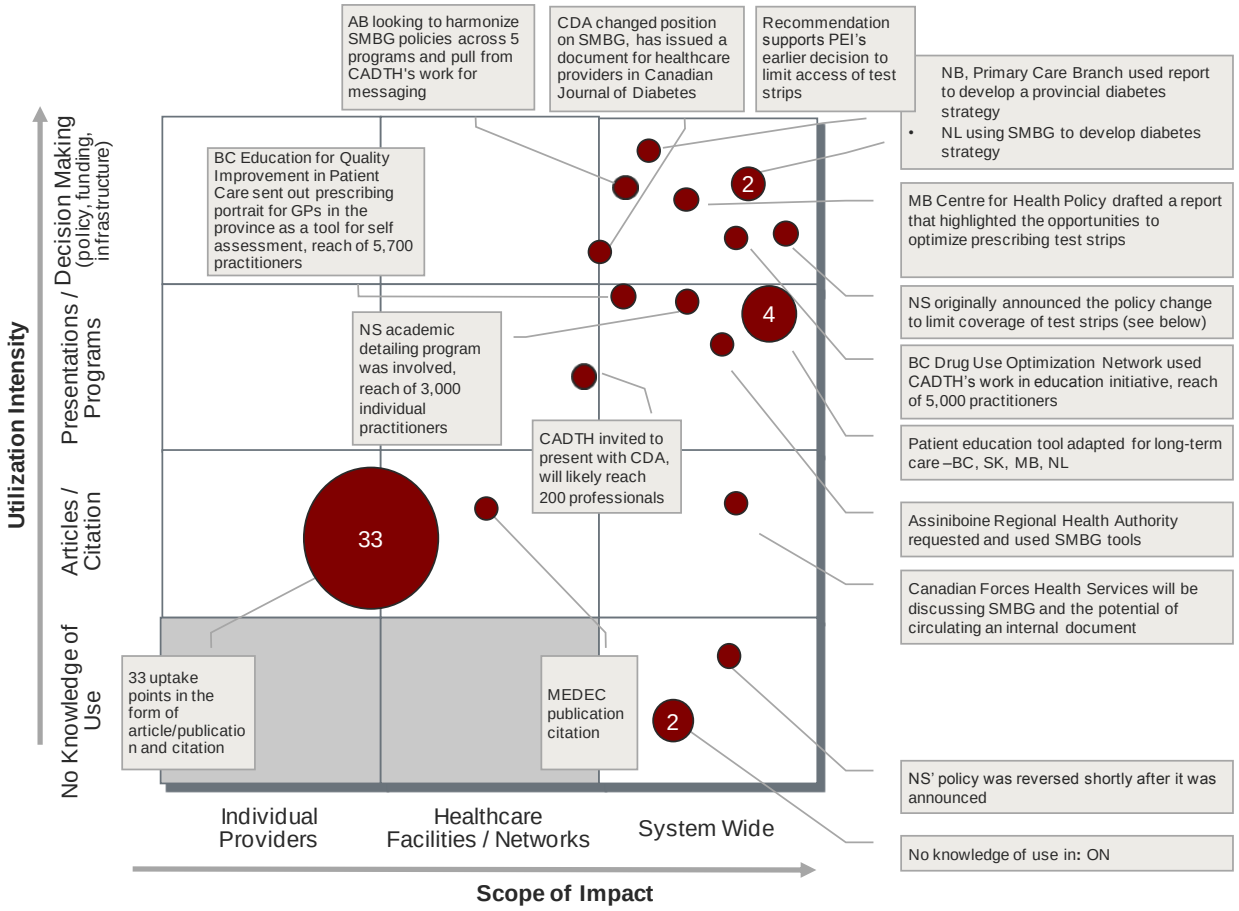
Reach and knowledge exchange activities:

- CADTH provided implementation support to ministries, health care networks, individual providers, and consumers
- Large proportion of total outreach efforts in SMBG spent on general dissemination of information to health care networks and providers



Uptake and Diffusion:

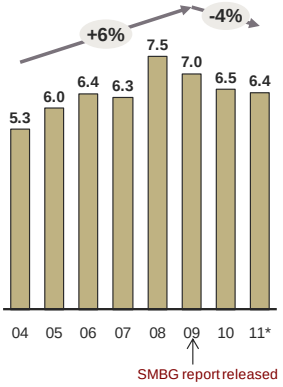
Although there has yet to be a policy change, a number of jurisdictions are using the SMBG project for educational purposes (notably BC and NS); NB and NL are using evidence to inform diabetes strategy.



Diffusion and Impact on Cost:

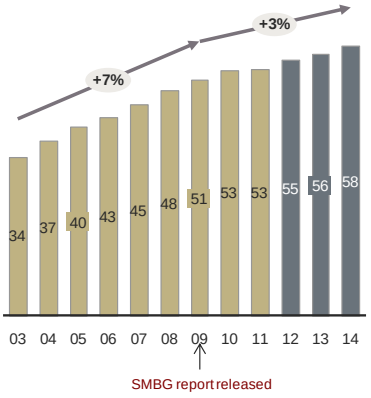
- NS and BC: the two jurisdictions that have structured academic detailing programs to implement recommendations from Optimal Use projects that focus on changing clinical practice
- NS has demonstrated a reduction in test strips expenditure
- BC has implemented outreach initiatives, but are relatively new compared with NS; the growth in spending on test strips in BC has slowed down
- Comparatively, test strip costs in provinces that do not have a structured academic detailing program are growing at >5% a year.

**Nova Scotia Test Strip Cost**
*($millions) 2004-2011, IMS Brogan Data*




*2011 Q4 Cost is projected

**British Columbia Test Strip Cost**
*($, millions) 2003-2014(projected), BC data*




**Bayers data**

- Information from **Bayers:** average growth of test strip cost in Canadian market from 2008-2011: 8.5%

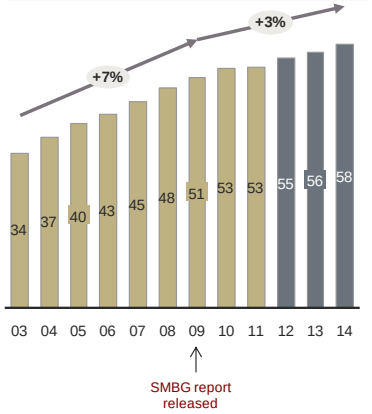
**Ontario Test Strip Trends**
*CMAJ study, 1997-2008 (Specific year by year data unavailable)*

- Among patients aged 65 or older, the total number of blood glucose test strips dispensed increased almost 5-fold, from 24.9 million strips in 1997 to 117.6 million strips in 2008 **(CAGR of ~15%)**

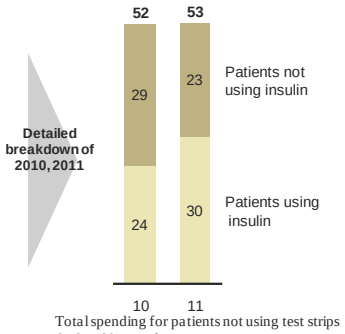
Further details on BC:

In 2010-2011, a significant slowdown of growth momentum was observed for the test strips cost. The decline in growth is mainly due to a decrease of test strip usage by patients not using insulin, in keeping with CADTH recommendations.

**British Columbia Test Strip Cost**
*($, millions) 2003-2014(projected), BC data*




**Breakdown of test strip cost for patients using and not using insulin**
*($, millions) 2010-2011, BC data*




Total spending for patients not using test strips declined by 4% from 2010 to 2011.
This 4% decline is due to:

- A lower number of patients (3%) using test strips
- Decreased cost per patient (1%) (usage of test strips per patient decreased while dispensing fees increased)

**Information from Bayer**
*BC data*

BC cost growth in test strips:

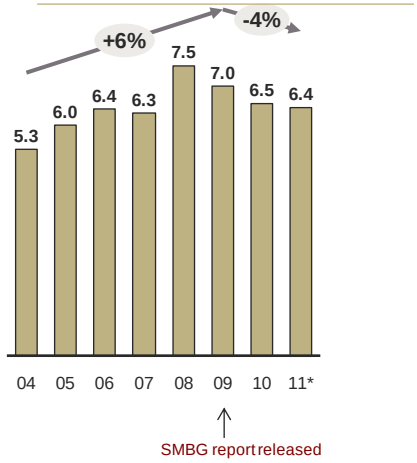
- 2009- 14.5%
- 2010- 9.9%
- 2011- 1.2%

→ Consistent with BC's own data

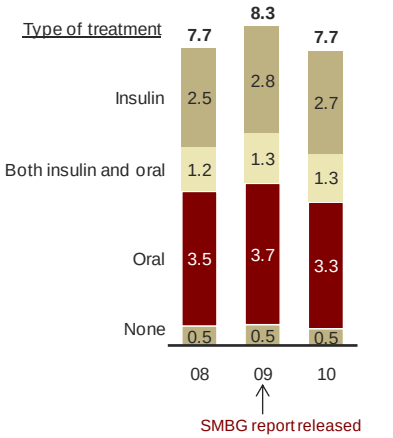
Further details on NS:

- Some variability between IMS Brogan data and NS jurisdictional data
- A decrease in cost the year after the release of SMBG reports is observed in both datasets
- As per jurisdictional data, a decrease in average consumption of test strip per beneficiary is observed for patients on insulin treatment and patients on oral treatment
  - Number of data points from the jurisdictional data is insufficient to draw conclusion on trends.

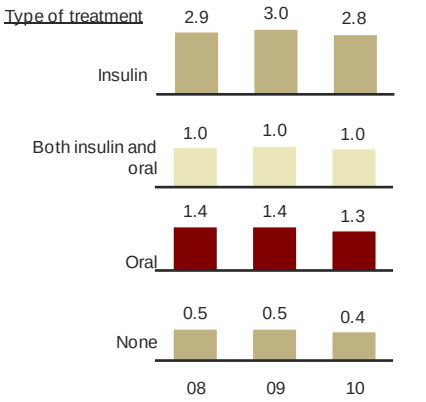
**IMS Brogan Data - Nova Scotia Test Strip Cost**
*($millions) 2004-2011*




**Jurisdictional data - Nova Scotia Test Strip Cost**
*($millions) 2008-2010*




**Jurisdictional data – Consumption by type and number of beneficiary**
*(Average $ Strips / beneficiary / day) 2008-2010*




Impact on Health Outcome:

- CADTH recommendation is based on the scientific facts that demonstrated that health of type 2 diabetes patients not using insulin would not change with reduced test strip usage
- Two studies were conducted and concluded that education sessions can reduce the usage of test strips
- Majority of the participants from one study reported that there have been no differences in the anxiety level during study period (pre- and post-education session).

**A study conducted by Dr. Kerry Mansell from College of Pharmacy and Nutrition in Saskatchewan:**

- The study concluded that type 2 diabetes patients not on insulin can be influenced by community pharmacists to reduce blood glucose testing
- Majority of the participants reported there has been no differences in the anxiety level during the study period
- Patients were recruited from a single community pharmacy in Saskatchewan, and were informed of CADTH recommendations; a questionnaire was administered at study-end to assess receptiveness to the SMBG recommendations, and a follow-up phone interview was performed 3 months after study completion to assess SMBG frequency
- Intervention: an 8 minute verbal education session providing evidence-based recommendations
- Median of frequency of testing pre-study was 9 times a week, and post-study was 4 times a week; 67% participants continued less frequent testing 3 month after completion of the study

**A study conducted by Jenna Brown (a hospital pharmacy resident) from St. John Regional Hospital in New Brunswick:**

- The objective of the study is to optimize SMBG in people with type 2 diabetes not using insulin who are ≥65 years of age through a patient centered educational intervention
- The results of the study demonstrated a decrease of test strip usage post test strip education session
- Intervention: verbal education sessions
- Average number of tests per week reduced from 6.1 (pre-education) to 2.6 (1 month post-education) 64% participants reduced testing frequency at 4-6 weeks, 72% reduced testing at 6 months

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