Priority Setting for Health Technology Assessment of Non-pharmaceutical Technologies: Practical Canadian and International Approaches

Bernice Tsoi, Lisa Masucci, Kaitryn Campbell, Pimwara Tanvejsilp, Daria O’Reilly, Mike Drummond, Ron Goeree

May 7, 2013
Agenda

- Introduction to HTA and its Processes
- Objectives of Study
- Methods
- Results
- Recommendations & Conclusion

NOTE: Points of interest are denoted by:
**Health Technology Assessment (HTA)**

- “Multi-disciplinary process ... summarises information about the medical, social, economic and ethical issues related to the use of a health technology...to inform the formulation of safe and effective health policies” (Garrido et al, 2006)

- HTA can enter into the following policy-processes:
  - Agenda setting
  - Policy formulation
  - Decision making (e.g. reimbursement)

HTA Process

Figure 1: Four principal stages to HTA

Identify Topic
- May include prioritization

Conduct Assessment

Disseminate Findings

Evaluate Impact of HTA on Health Policy

5 Elements to Topic Identification and Prioritization

1. Identify problems of relevance
2. Identify possible types of assessment to help address these decision problems,
3. Judge potential relative benefits - costs to help set priorities b/t topics,
4. Communicate priorities to those responsible for undertaking assessments,
5. Monitor and review assessments and priorities

Objectives of Study

➢ To describe and to evaluate the current approaches for:
   (i) topic identification, and
   (ii) prioritization
for the HTA assessment of non-pharmaceutical technologies across four Canadian and eight international HTA organizations.
METHODS
Methods

- Systematic literature review:
  - Database searched: Medline, EMBASE, Cochrane, HEED, PubMed, BIOSIS
  - Grey literature: agency websites, policy documents, commissioned report, working papers
  - Literature published up to September 4, 2012

- Interviews
  - Canadian HTA representatives to ensure accuracy in data collection
List of HTA Agencies Studied

- 12 quasi-governmental agencies across nine countries
  - Australia- Medical Services Advisory Committee (MSAC)
  - Belgium- Health Care Knowledge Center (KCE)
  - Canada- Canadian Agency for Drugs and Technologies in Health (CADTH)
    Health Quality Ontario, formerly: Medical Advisory Secretariat (MAS)/Ontario Health Technology Advisory Committee (OHTAC)
    Institut National D’Excellence en Santé et en Services Sociaux (INESSS)
    Alberta Health and Wellness (AHW)
  - Denmark- Danish Centre for Health Technology Assessment (DACEHTA)
  - England- National institute for Health and Care Excellence (NICE)
  - Finland- Finnish Office for Health Technology Assessment (FinOHTA)
  - Germany- Institut für Qualität und Wirtschaftlichkeit im Gesundheitswesen (iQWiG)/Federal Joint Committee (G-BA)
  - Sweden- Statens beredning för medicinsk utvärdering (SBU)
  - USA- Agency for Healthcare Research and Quality (AHRQ)/Centers for Medicare and Medicaid Services (CMS)
RESULTS
Figure 2: PRISMA Diagram of Systematic Literature Review

- **Identification**:
  - Records identified through database searching (n = 1986)
  - Additional records identified through other sources (n = 39)
  - Records after duplicates removed (n = 1722)

- **Screening**:
  - Records screened (n = 1722)
  - Records excluded (n = 1634)

- **Eligibility**:
  - Full-text articles assessed for eligibility (n = 88)
    - Full-text articles excluded, with reasons
      - Focus no in HTA-agencies of interest (n = 9)
      - Does not discuss currently practices processes for topic nomination/prioritization within an HTA setting (n = 17)
      - Not primary literature (n = 11)

- **Included**:
  - Studies included in narrative synthesis (n = 51)
Of the 51 studies included:

- Topic nomination: 23
- Prioritization: 16

**Figure 3:** Breakdown of study by topic

**Figure 4:** Number of studies published by jurisdiction
Table 1: Types of Non-pharmaceutical Technologies Assessed

<table>
<thead>
<tr>
<th></th>
<th>Medical devices</th>
<th>Procedures</th>
<th>Diagnostic Tests</th>
<th>Public-health interventions (e.g. screening/prevention)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia (MSAC)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Belgium (KCE)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Canada (CADTH)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Canada (AHW)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>√</td>
</tr>
<tr>
<td>Canada (OHTAC; MAS)</td>
<td>✓</td>
<td>✓</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>Canada (INESSS)</td>
<td>✓</td>
<td>✓</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>Denmark (DACEHTA)</td>
<td>✓</td>
<td>✓</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>England (NICE; MTAC)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>√</td>
</tr>
<tr>
<td>Finland (FinOHTA)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>√</td>
</tr>
<tr>
<td>Germany (JDC; IQWiG)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>√</td>
</tr>
<tr>
<td>Sweden (SBU)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>√</td>
</tr>
<tr>
<td>USA (CMS; AHRQ)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>√</td>
</tr>
</tbody>
</table>

All agencies studied currently assess a wide variety of non-pharmaceutical health technologies.
Goal: Identify topics that are of most relevance to decision-makers

Process categorized as either:

(i) Open Process: Topics proposed by wide group of internal and external stakeholders
   - May involve additional strategies (e.g. horizon-scanning)

(ii) Focused Process: Topics proposed internally
### Table 2: Who can Nominate HTA Topics?

<table>
<thead>
<tr>
<th>Organization</th>
<th>Country</th>
<th>Referrals received from:</th>
<th>Horizon Scanning</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Ministry</td>
<td>SHI Payer</td>
</tr>
<tr>
<td>MSAC</td>
<td>Australia</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>KCE</td>
<td>Belgium</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>CADTH</td>
<td>Canada</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>AHW</td>
<td>Canada</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>OHTA</td>
<td>Canada</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>INESS</td>
<td>Canada</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>DACEHTA</td>
<td>Denmark</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>NICE; MTAC</td>
<td>England</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>FinOHTA</td>
<td>Finland</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>G-BA; iQWiG</td>
<td>Germany</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>SBU</td>
<td>Sweden</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>CMS; AHRQ</td>
<td>USA</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

Majority of organizations have adopted an open process in nominating non-pharmaceutical HTA topics.
Requirements for Topic Identification

- Few agencies have clear eligibility requirements

- Of those with explicit requirements, it ensures:
  1. Relevance and appropriateness of topics
  2. Temporal proximity
Prioritization and Selection of HTA:

- **Goal:** To develop set of criteria to evaluate and rate potential topics against others, while considering additional quantitative and qualitative information relevant to each assessment.

- Criteria can be classified as either:
  1. Disease attributes
  2. Attributes of the technology
  3. Organization/ system-related concerns
  4. Technical issues
<table>
<thead>
<tr>
<th>Criteria</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinical impact</td>
<td>Claimed therapeutic benefit of the proposed technology in comparison to current care</td>
</tr>
<tr>
<td>Financial impact</td>
<td>Potential total costs and incremental budgetary impact from a policy changes with this technology in comparison to current care</td>
</tr>
<tr>
<td>Number of patients</td>
<td>Prevalence or incidence of the condition</td>
</tr>
<tr>
<td>Disease burden</td>
<td>Disease burden of the population affected by this technology</td>
</tr>
<tr>
<td>Variation in existing clinical practice</td>
<td>Variation in utilization rates of this technology for the given clinical condition</td>
</tr>
<tr>
<td>Current technology access/use</td>
<td>Pattern of access and utilization impact of the technology in the current healthcare system</td>
</tr>
<tr>
<td>Feasibility</td>
<td>Availability of evidence and ability of this HTA to be readily conducted.</td>
</tr>
<tr>
<td>Impact on health policies</td>
<td>Health policy implications associated from the policy changes with this technology</td>
</tr>
<tr>
<td>Organization</td>
<td>Country</td>
</tr>
<tr>
<td>--------------</td>
<td>------------</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>MSAC</td>
<td>Australia</td>
</tr>
<tr>
<td>KCE</td>
<td>Belgium</td>
</tr>
<tr>
<td>CADTH</td>
<td>Canada</td>
</tr>
<tr>
<td>AHW</td>
<td>Canada</td>
</tr>
<tr>
<td>OHTAC; MAS</td>
<td>Canada</td>
</tr>
<tr>
<td>INESSS</td>
<td>Canada</td>
</tr>
<tr>
<td>DACEHTA</td>
<td>Denmark</td>
</tr>
<tr>
<td>NICE; MTAC</td>
<td>England</td>
</tr>
<tr>
<td>FinOHTA</td>
<td>Finland</td>
</tr>
<tr>
<td>G-BA; iQWiG</td>
<td>Germany</td>
</tr>
<tr>
<td>SBU</td>
<td>Sweden</td>
</tr>
<tr>
<td>CMS; AHRQ</td>
<td>USA</td>
</tr>
</tbody>
</table>
Prioritization and Selection of HTA:

- A proactive approach to prioritization observed in all organizations

- Heterogeneity in the prioritization criteria exist although, the most commonly-cited criteria are:
  1. Clinical impact (n=11/12)
  2. Financial impact (n=10/12)
  3. Feasibility = Number of patients = Disease burden (n=8/12)

Despite significant heterogeneity, most priority-setting considers the available evidence and the likely outcomes of assessment.
Prioritization and Selection of HTA:

- Overall, process lacks transparency with the exception of:
  - CADTH: weighted rankings of quantitative scores\(^1\)
  - NICE: ordinal rating scale\(^2\)

Although both agencies have an explicit rating/ranking system, they also allow consideration of additional contextual factors

2. NICE (2012) Updated priorisation criteria for referral of technology appraisal to NICE
GENERAL RECOMMENDATIONS AND CONCLUSIONS
General Recommendations to Priority Setting

- HTA is adaptive to a jurisdiction’s health care values and political environment
  - Process must be flexible given that it exists in a world of constant flux

- Flexibility must be balanced with a systematic approach
  - Consistent membership vs. weighting criteria

- Transparency:
  - Can be improved with increased interaction and dialogue
  - But, has cost and time implications
Conclusions

- Approach should reflect the program’s goals, resources available and the preferred working methodology of those involved.

- Most common criteria: clinical impact, financial impact, number of patients, disease burden and feasibility. Others may be included that are specific to organization’s and jurisdiction’s needs.

- Tradeoffs exist in developing a priority-setting approach:
  - Clarity/transparency vs. timeliness
  - Flexibility vs. systematic
Acknowledgements

- Funding from this study was provided by Health Canada.
- Personnel support from Award from the Father Sean O’Sullivan Research Centre, St. Joseph’s Healthcare Hamilton and the CIHR Drug Safety and Effectiveness Cross-Disciplinary Training (DSECT) program.

The views presented here are solely of the presenters and do not necessarily reflect official views of Health Canada.
Thank you

Contact
tsoib@mcmaster.ca