Development of a Multi-Criteria Decision Analysis (MCDA) Rating Tool to prioritize RWE questions arising from cancer drug funding decisions

Ontario Health Research Week 2022

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CanREValue
Value-based decisions from Real World Evidence

ARCC
Canadian Centre for Applied Research in Cancer Control

CIHR IRSC
Canadian Institutes of Health Research | Instituts de recherche en santé du Canada

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Objectives

- Describe the CanREValue Collaboration
- Describe the development of the MCDA rating tool

What is CanREValue?

- Canadian Real-world Evidence for Value of Cancer Drugs
- pan-Canadian initiative
- Intended to develop framework for the **generation** and **use** of real-world evidence (RWE) to support drug funding decisions in oncology

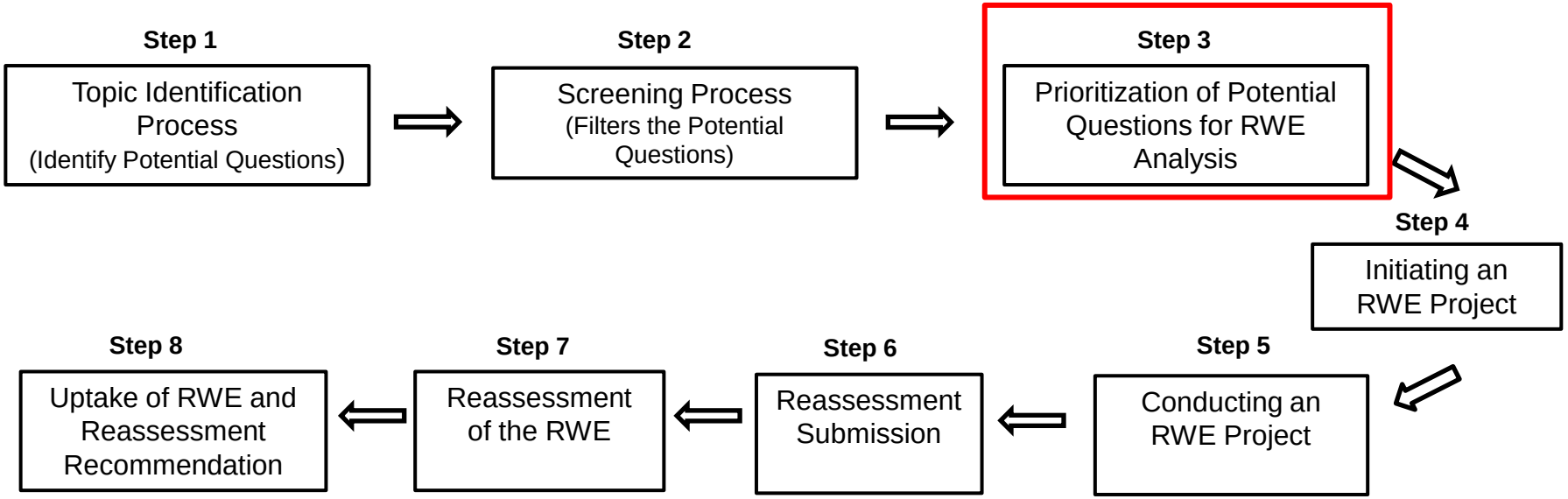
What is Real-World Evidence (RWE)?

- RWE is generated through the analysis of real-world data (RWD)
- RWD is data collected in a non-randomized controlled trial setting (e.g., health records, registries, drug claims data, etc.)
- RWE is more prone to data bias and confounding, however, it may have much greater external validity.

Why do we need CanREValue?

- Data supporting cancer drug approvals may be limited
- Interest in studying cancer drugs once they're implemented and available to patients
- Potential for RWE is known, but generation and use is limited
- No consensus on how to incorporate RWE into drug funding decisions
- Overall intent: support health system sustainability by creating process for reassessment of cancer drug funding decisions

CanREValue Framework



How to prioritize?

- Large number of potential questions that could be addressed with RWE
- CanREValue identified the need for a mechanism to assess potential projects and prioritize them

Multi-Criteria Decision Analysis (MCDA)

- Tool to support decision-making
  - Facilitates consideration of multiple different attributes
  - Assessment of trade-offs
  - Promotes transparency
- Increasingly evaluated as a decision-aid in healthcare
  - Clinical decision-making (e.g., cancer screening)
  - Health policy (e.g., value assessment of healthcare interventions)
- Early supportive evidence for use of MCDA in research prioritization

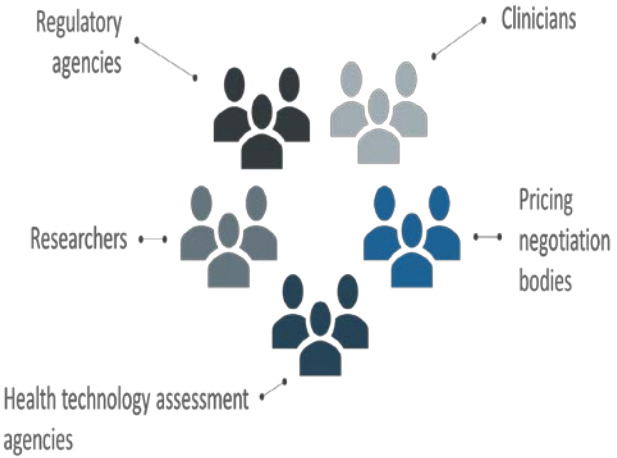
Development of the MCDA Rating Tool

Methodological Approach

Step 1
- Selection of criteria to assess importance and feasibility of an RWE study

Step 2
- Development of rating scales and weighting of criteria

Step 3
- Pilot testing of the MCDA rating tool



Multi-stakeholder Consultation

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Step 1: Selection of Criteria

Step 1:
Selection of criteria to assess importance and feasibility of an RWE study

Importance

- Drug's perceived clinical benefit
- Magnitude of uncertainty
- Impact of uncertainty
- Relevance of uncertainty to decision-makers

Feasibility

- Ability to identify a comparator
- Ability to identify cases
- Availability of comprehensive data
- Availability of necessary expertise
- Availability of methodology

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Step 2: Rating Scales & Weighting of Criteria

Step 2:
Development of rating scales and weighting of criteria

Criteria	Most Important	Least Important
Importance of RWE Question		
Drug's Clinical Benefit	✓✓✓	✓
Magnitude of uncertainty	✓	✓✓
Impact of uncertainty	✓	
Relevance of uncertainty	✓✓	
Feasibility of RWE Question		
Comparator	✓✓	✓
Cases	✓✓	✓
Data	✓✓	
Expertise		✓✓✓✓
Methodology		✓✓✓

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Sample Criterion:

Relevance of uncertainty to decision-makers

Objective: assess the **relevance of resolving the uncertainty** to decision-makers

What is the likelihood that resolving the uncertainty with new evidence will alter the funding status or clinical treatment recommendations?

1	2	3
Expected **low likelihood for new evidence to facilitate a change in funding status** (i.e., facilitate drug price re-negotiations) and/or change in clinical treatment recommendations (i.e., indicated patient populations or treatment sequence)	**Uncertain likelihood for new evidence to facilitate a change in funding status** (i.e., facilitate drug price re-negotiations) and/or change in clinical treatment recommendations (i.e., indicated patient populations or treatment sequence)	Expected **high likelihood for new evidence to facilitate a change in funding status** (i.e., facilitate drug price re-negotiations) and/or change in clinical treatment recommendations (i.e., indicated patient populations or treatment sequence)

Step 3: Pilot testing

Step 3:
Pilot testing of the MCDA rating tool

Multi-disciplinary committee

- Clinical expertise
- Methodologists
- Decision-makers

Considering a recent drug funding review, apply the MCDA rating tool to an outstanding question from that review that could potentially be answered with RWE

Committee meets to review individual ratings to come to a consensus

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Pilot Testing – Key Feedback

- MCDA rating tool was easy to use
- Committee members frequently achieved consensus on the rating for each criteria
- Some users reported uncertainty in rating criteria 1 (perceived clinical benefit), 4 (relevance of uncertainty), 7 (availability of comprehensive data) and 9 (availability of methodology)

  → **Response: Importance of a multi-disciplinary committee with a 'core group' of experts**

- Many users noted overlap in interpretation and rating of criteria 3 (impact of uncertainty) and criteria 4 (relevance of uncertainty)

  → **Response: Criteria 3 has been removed**

- Many users reported that criteria 8 (availability of necessary expertise) and criteria 9 (availability of methodology) were inherently linked with similar ratings

  → **Response: Criteria 8 and 9 have been combined**

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Current MCDA Rating Tool Criteria

Importance

- Drug's perceived clinical benefit
- Magnitude of uncertainty
- Relevance of uncertainty to decision-makers

Feasibility

- Ability to identify a comparator
- Ability to identify cases
- Availability of comprehensive data
- Availability of necessary expertise & methodology

RWE Proposal Rating, Range: 100 – 300

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Conclusions

- The use of MCDA for research prioritization is feasible.
- Application of the MCDA rating tool benefits from a multi-disciplinary approach.

Questions?