

# A Comprehensive Review of Real-World Evidence (RWE) Use in Pharmaceutical Review Submissions to Canada's Drug Agency (CDA-AMC)

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## Introduction

- Real-world evidence (RWE), derived from routinely collected real-world data (RWD), plays an increasingly critical role in health technology assessment (HTA) and CDA-AMC submissions. It fills important evidence gaps in economic modeling, comparative effectiveness, and areas lacking clinical trial data.
- However, uncertainty remains regarding the criteria for high-quality RWE, its appropriate use in HTA, and how expert committees interpret these data—especially when sourced from outside Canada.
- Understanding and improving the quality and applicability of RWE can enhance future submissions and strengthen decision-making by Canadian HTA committees.

## Objectives

- Characterize trends and types of RWE used in CDA submissions from 2020 to 2024.
- Assess applications and outcomes of RWE in the HTA process.
- Analyze CDA-AMC's feedback on submitted RWE, including areas for improvement.

## Methods

- A comprehensive review was conducted of all CDA-AMC sponsor submissions with published reports (N=274) from **January 2020 to June 2024**. Data were extracted from all available reports associated with submissions incorporating RWE, including recommendation documents, clinical reviews, and health economic evaluations (n=70).

- Key characteristics analyzed:

- Therapeutic area
- Applications of RWE in submissions
- Geographic source of RWE data (Canada vs. international)
- Study designs
- CDA-AMC feedback on submitted RWE
- Final reimbursement recommendations



Figure 1: Flow Chart of Review Process

\* RWD/E: Real-world data/evidence derived from sources outside of clinical trials

## Results

### 1. Increasing Use of RWE Over Time

- The number of CDA-AMC submissions incorporating RWE increased from 7 in 2020 to 20 in 2023.

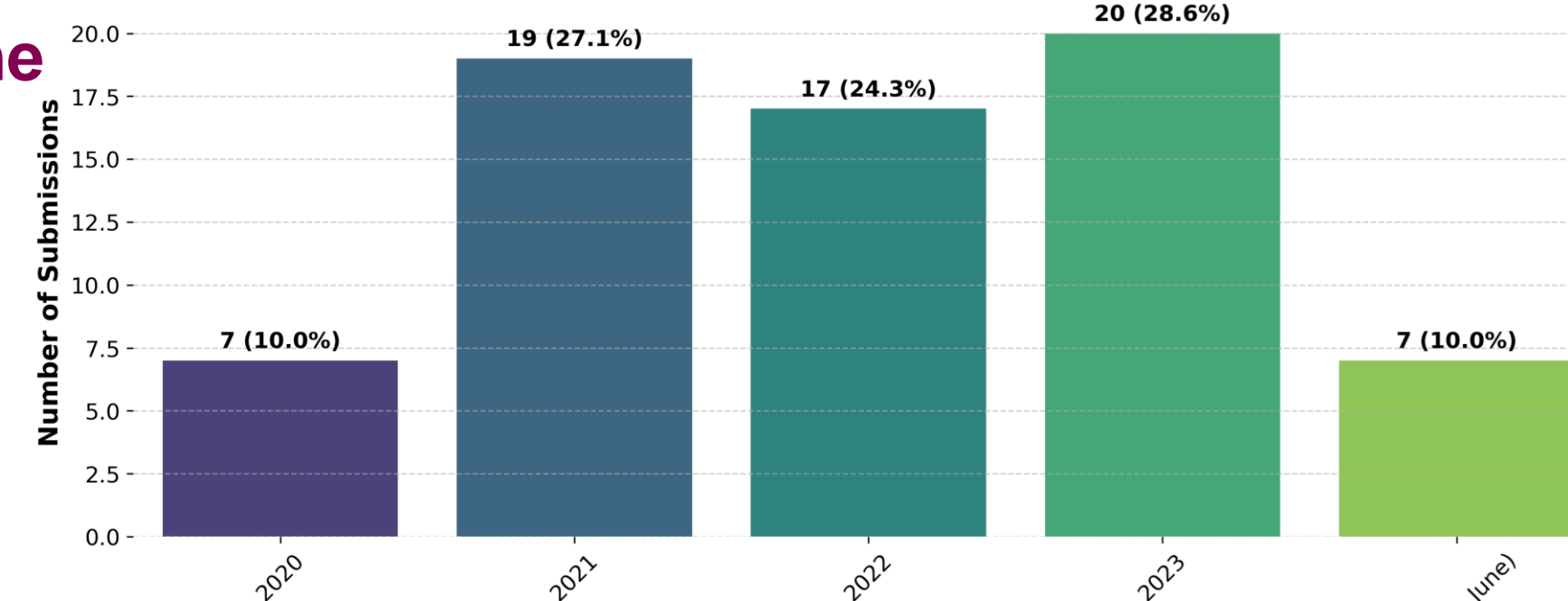


Figure 2: RWE Submissions to CDA-AMC By Year

### 2. Therapeutic Areas Utilizing RWE

- 44.3% (n=31) of RWE-inclusive submissions were for oncology, while 55.7% (n=39) were for non-oncology indications.

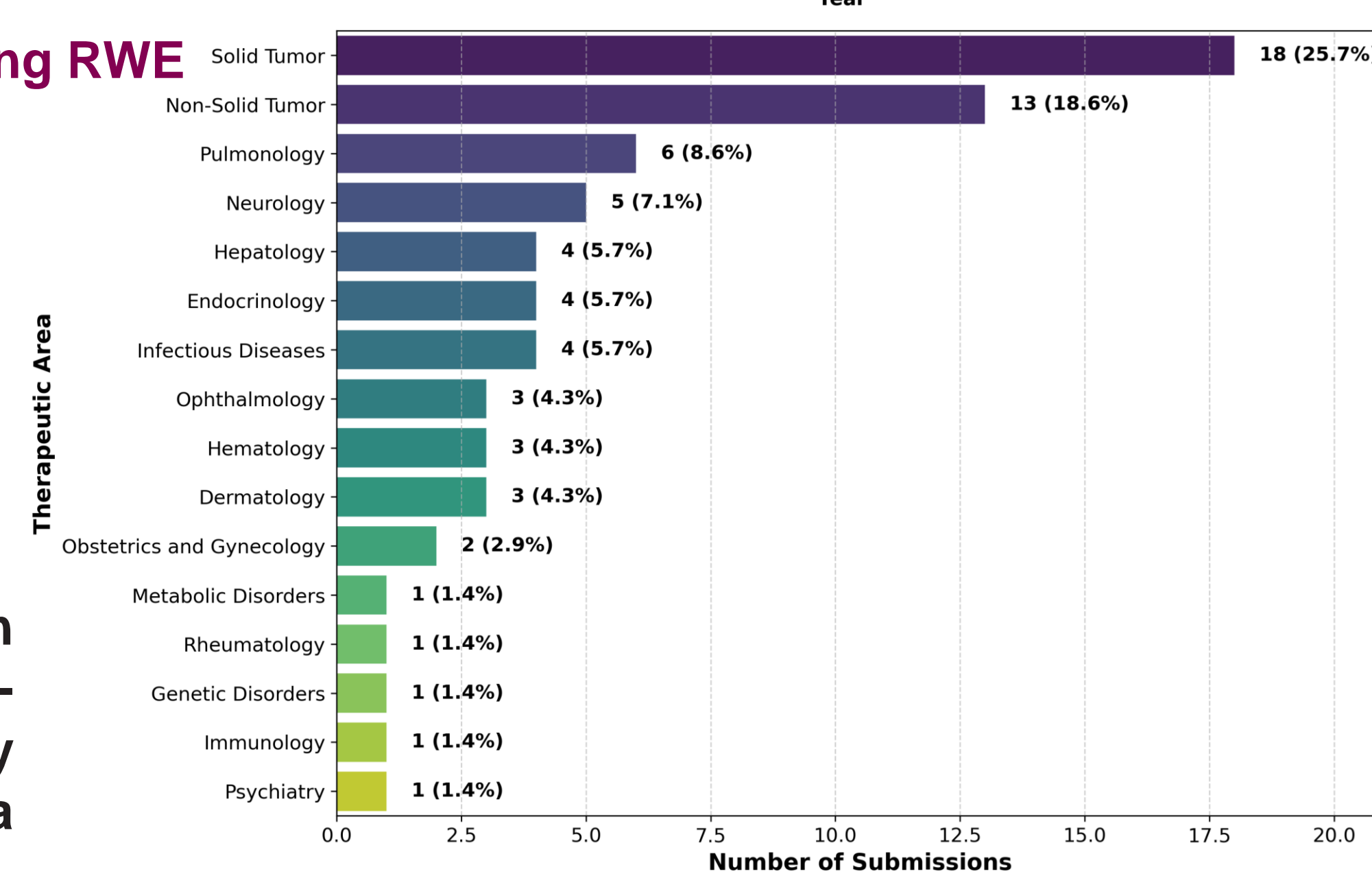


Figure 3: Breakdown of RWE Use in CDA-AMC Submissions by Therapeutic Area

## Results (cont.)

### 3. Key Applications of RWE in Submissions

- RWE supported multiple aspects of submissions:
  - Supportive clinical evidence (47.1%, n=33).
  - Indirect treatment comparisons (ITC) (41.4%, n=29).
  - Economic evaluation (67.1%, n=47).

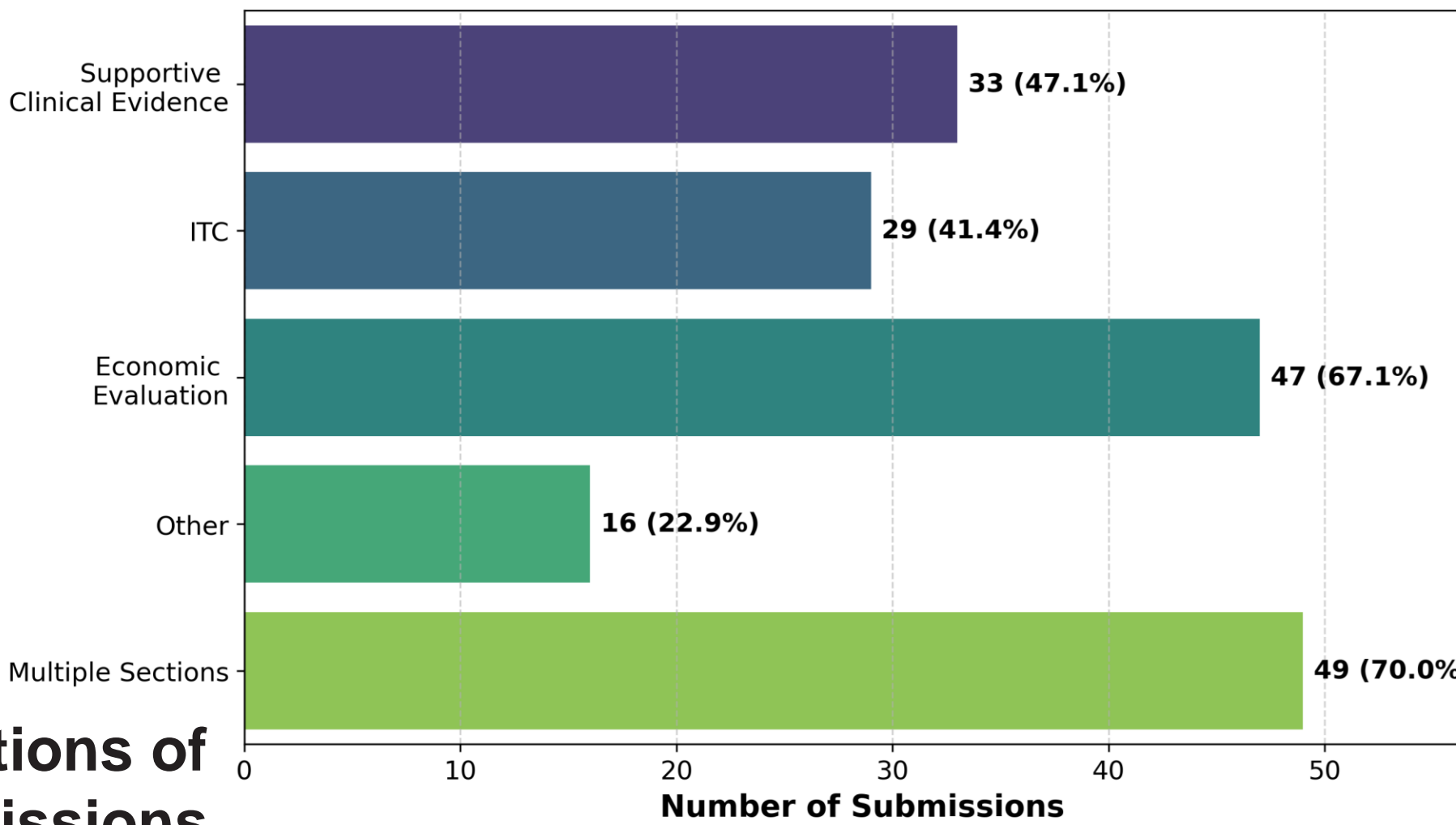


Figure 4: Key Applications of RWE in CDA-AMC Submissions

### 4. Geographic Origin of RWE Data

- 20.0% (n=14) relied on RWE from US sources, the most commonly used sources.
- 17.1% (n=12) used European data.
- 4.3% (n=3) of submissions used Canadian RWE.
- 2.9% (n=2) used data from other regions (e.g., Asia, Latin America).

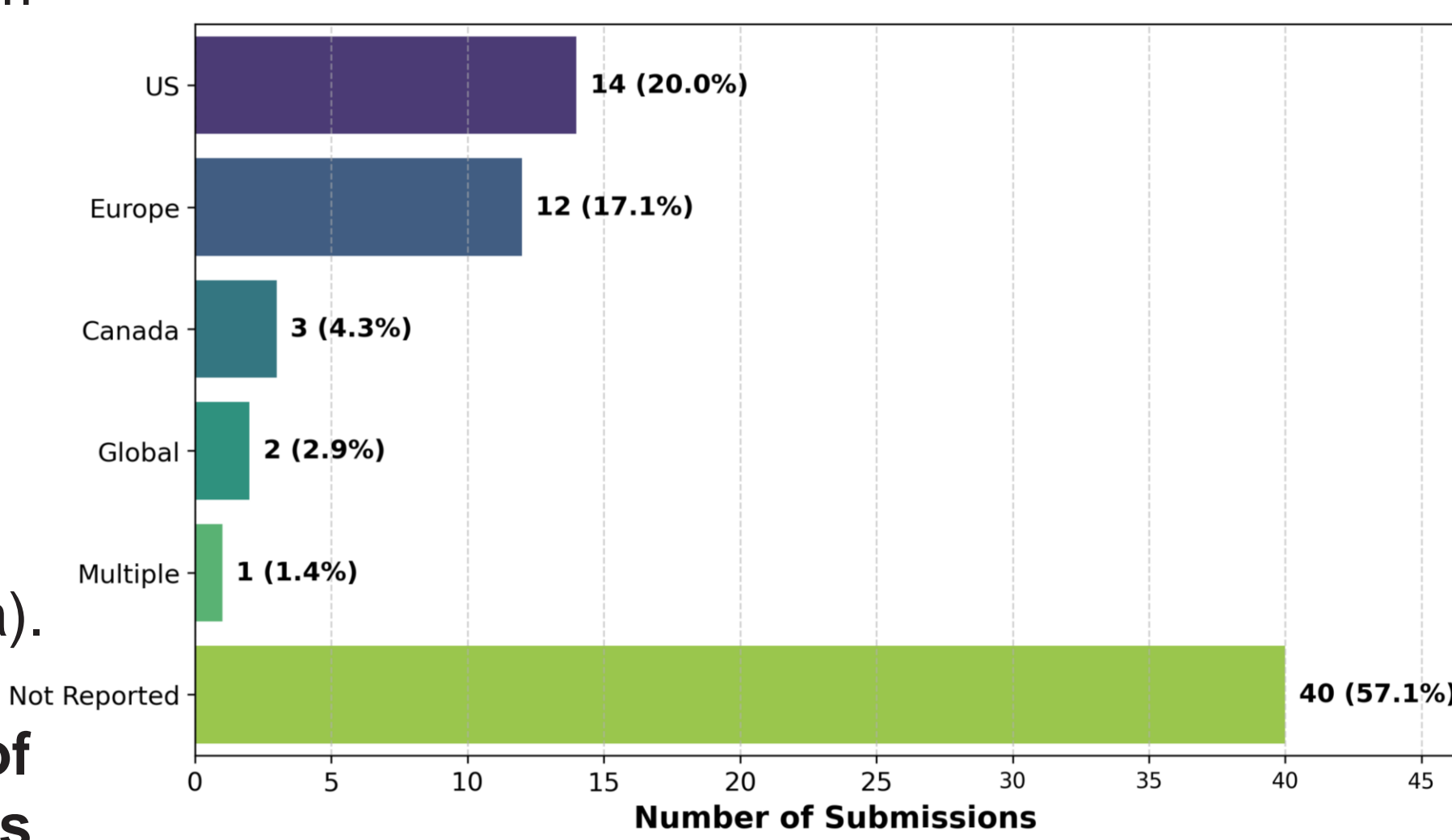


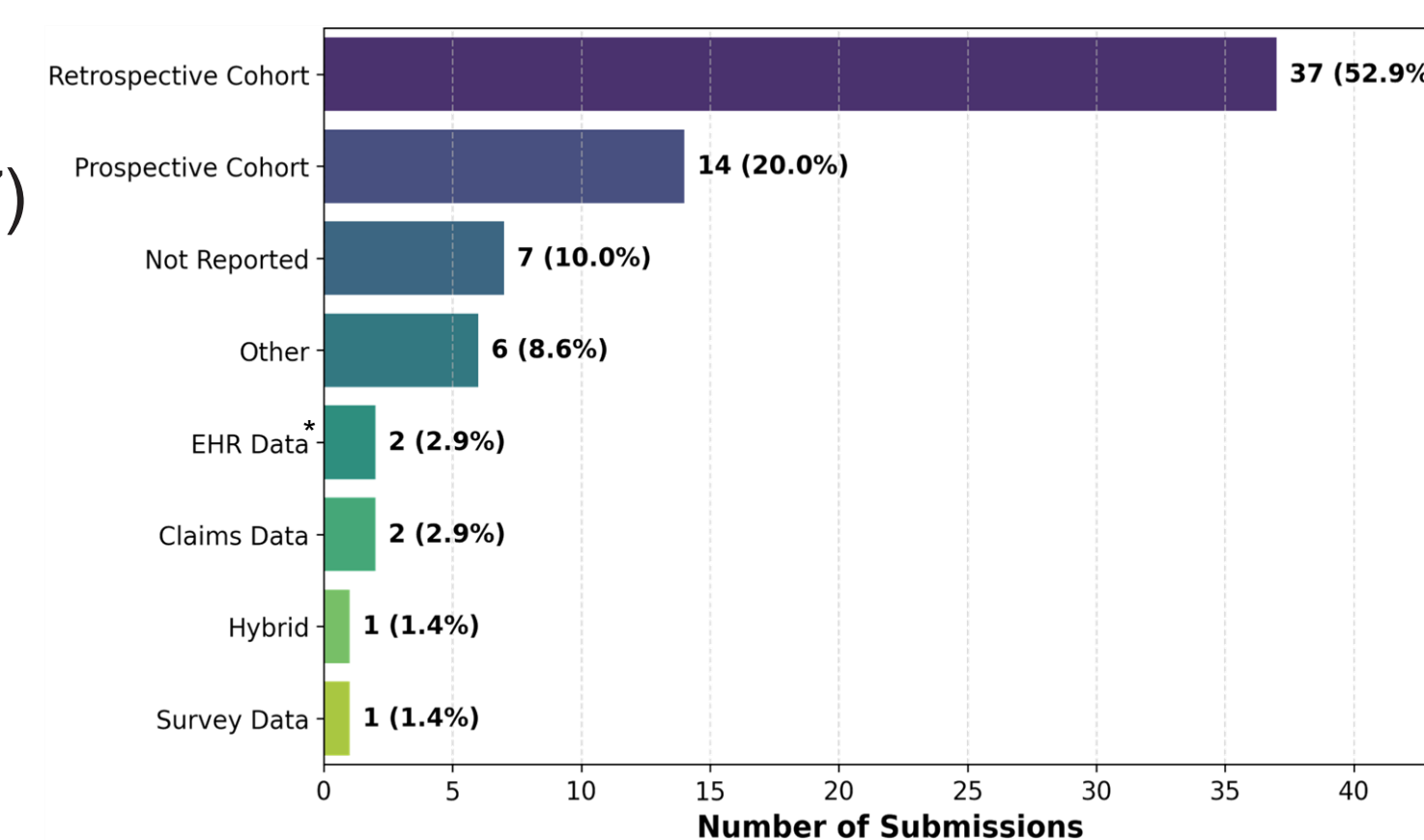
Figure 5: Geographic Origin of RWE Data Sources

### 5. Study Designs Used

- Retrospective cohort studies (52.9%, n=37) were the most common, followed by prospective cohort studies (20.0%, n=14).

Figure 6: CDA-AMC Submissions by RWE Data Collection Method

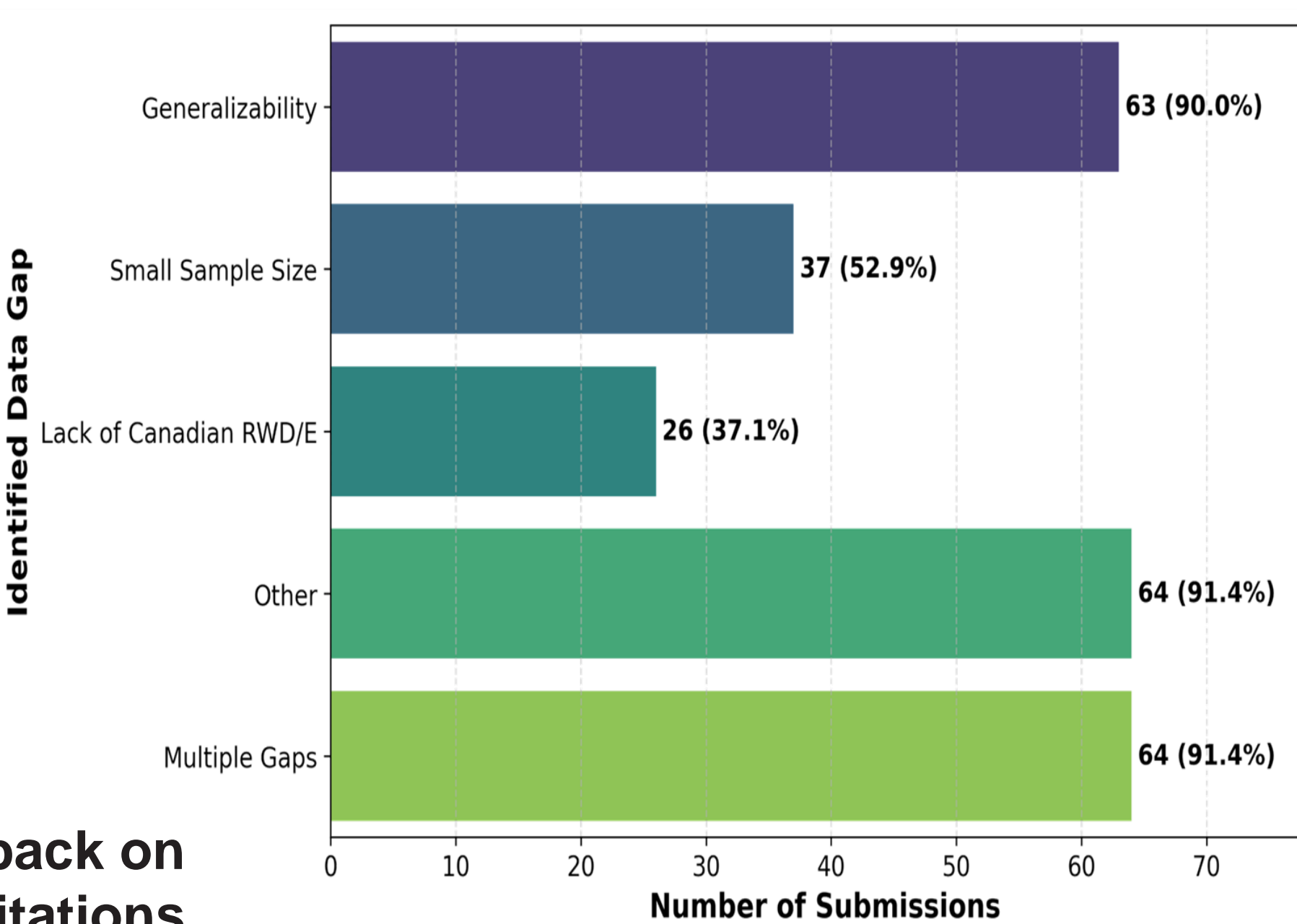
\* EHR Data: Electronic Health Record data



### 6. CDA-AMC Feedback on RWE Limitations

- 90.0% (n=63) of RWE submissions received feedback related to generalizability concerns.
- 52.9% (n=37) faced scrutiny for small sample sizes.
- 37.1% (n=26) were noted for a lack of Canadian data.
- "Other" category comprises issues such as inadequate duration of follow-up, missing data handling, incomplete reporting, and additional methodological gaps.

Figure 7: CDA Feedback on RWE Limitations

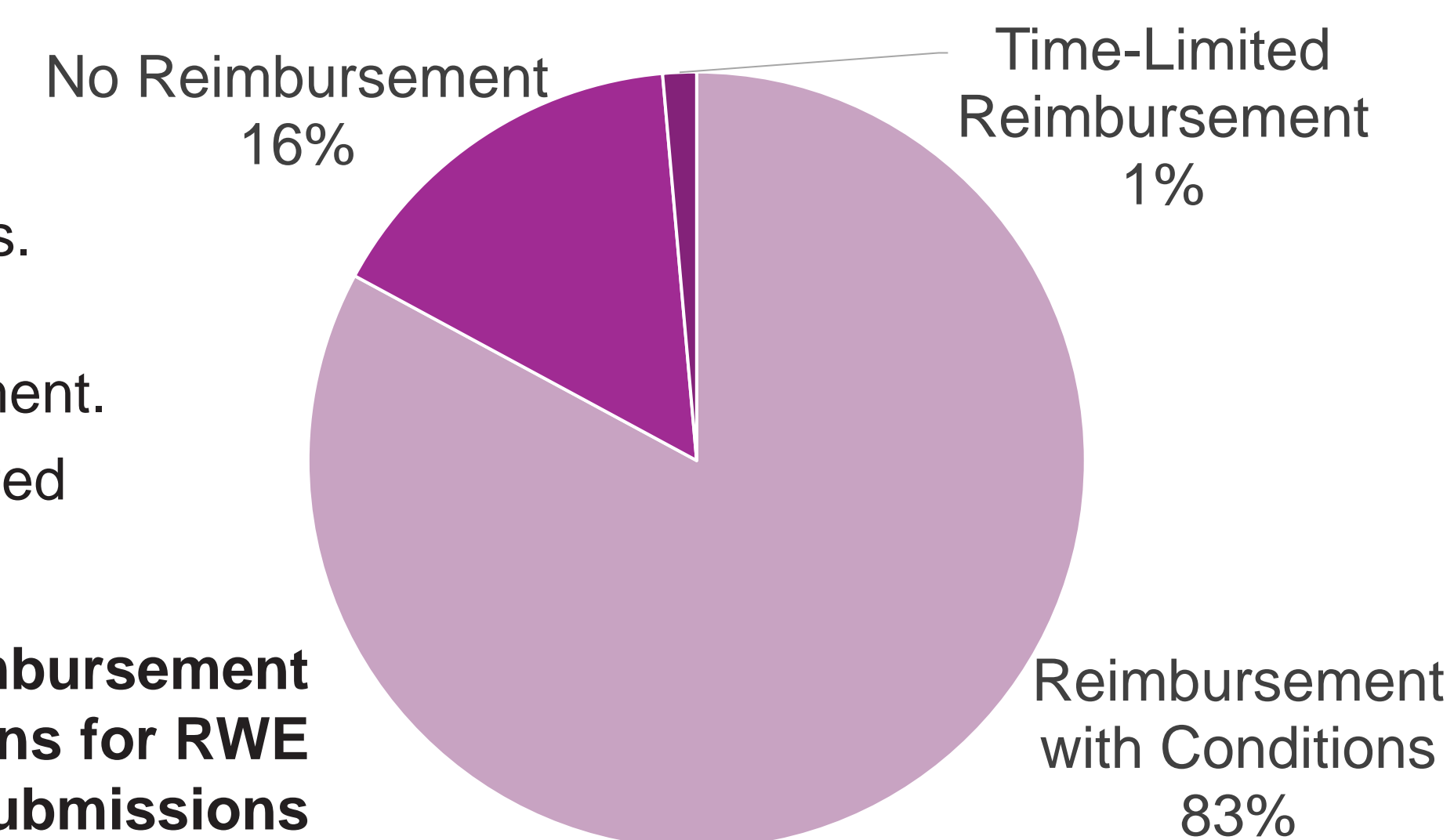


## Results (cont.)

### 7. Reimbursement Recommendations

- Among the 70 RWE-inclusive submissions:
  - 82.8% (n=58) received reimbursement with conditions.
  - 15.7% (n=11) were not recommended for reimbursement.
  - 1.4% (n=1) received time-limited reimbursement.

Figure 8: Reimbursement Recommendations for RWE Submissions



## Strengths/Limitations

### Strengths:

- Comprehensive systematic literature review (SLR) methodology.
- Covers a broad five-year period, capturing extensive HTA data.
- Highlights multiple areas where RWE was applied.

### Limitations:

- Limited availability of full reports for 2024, as many were unpublished at the time of research.
- Descriptive analysis without a comparative control group.

## Exploratory Insights

- Increased use of RWE over five years, with many submissions receiving conditional reimbursement decisions.
- RWE was most influential in economic evaluations within HTA submissions, with more limited—but notable—use in comparative assessments.
- Multi-regional data sources offer enhanced insights and comparability, highlighting the opportunity for transportability methods to further improve contextual relevance for Canadian settings.

## Conclusions

- The use of RWE is increasing in CDA-AMC submissions, particularly in oncology and economic evaluations.
- Generalizability remains a key challenge in RWE submissions, particularly when applying foreign data to Canadian decision-making contexts.
- Transportability analysis may help improve the applicability of foreign data to local contexts, potentially enhancing the acceptance of non-Canadian RWE in HTA decision-making.
- Improving RWE study design, increasing Canadian data generation or representativeness, and enhancing methodological rigor will be important for strengthening RWE's role in Canadian HTA.
- This review analyzes five years of CDA-AMC submissions, identifying key trends in RWE use and evaluation in Canada, including the increasing reliance on non-Canadian RWE. While descriptive, this analysis does not establish a causal link between RWE use and reimbursement decisions.
- Recommended Next Steps: Development of formal transportability guidelines, modeled after initiatives by NICE, to facilitate increased adoption and effective integration of high-quality international RWE into Canadian HTA processes.

## Disclosures

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