



UNIVERSITY OF TORONTO
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E-prescribing on Opioid-related Experiences and Outcomes: A Rapid Scoping Review

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Optimizing Healthcare Experiences (Opti-He_x) Lab

Disclosures

- Commissioned by Canada Health Infoway
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- The opinions, results and conclusions of this review are those of the authors and are independent from the funding sources



SPOR Evidence Alliance
Strategy for Patient-Oriented Research

Alliance pour des données
probantes de la SRAP
Stratégie de recherche axée sur le patient



Canada Health **Infoway**
Inforoute Santé du Canada



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Land Acknowledgement

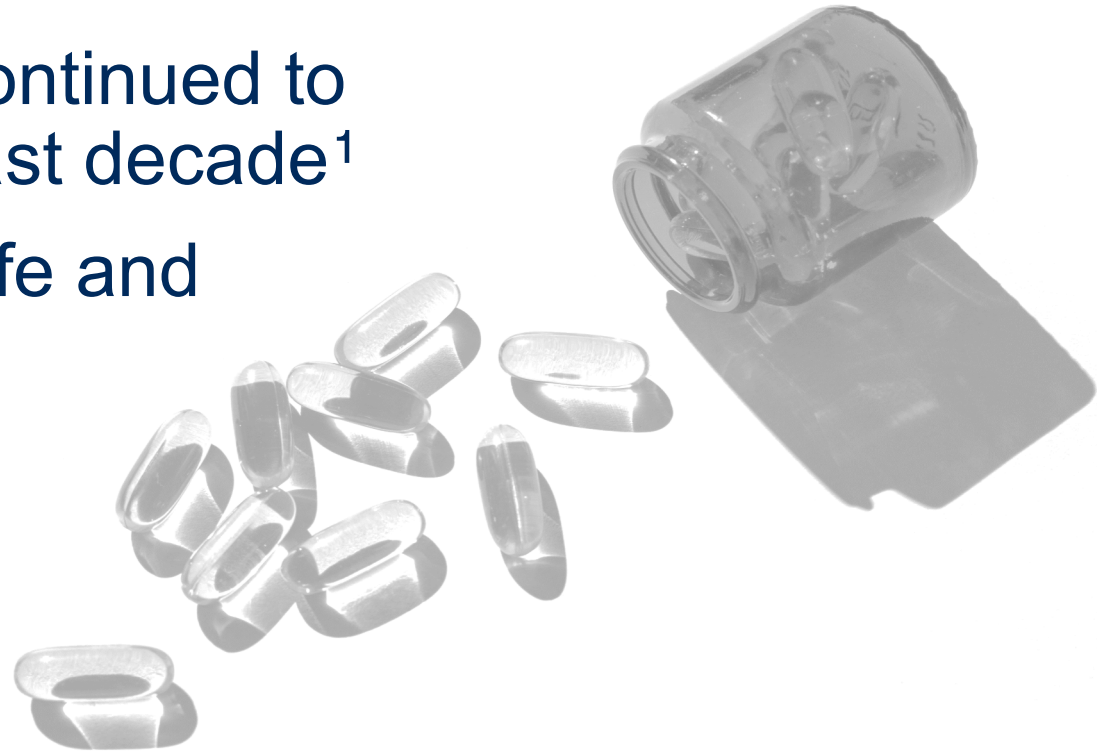
We wish to acknowledge this land on which the University of Toronto operates. For thousands of years, it has been the traditional land of the Huron-Wendat, the Seneca, and the Mississaugas of the Credit. Today, this meeting place is still the home to many Indigenous people from across Turtle Island and we are grateful to have the opportunity to work on this land.



Background

The Opioid Crisis

- Rates of opioid-related harms have continued to increase in North America over the past decade¹
- Opioids need to be prescribed in a safe and appropriate manner



¹ Imtiaz et al. (2020) Substance abuse treatment, prevention, and policy

Background

Electronic Prescribing

Electronic prescribing (e-prescribing) is:

- Secure electronic creation and transmission of a prescription between the prescriber and patient's pharmacy using clinical point-of-service solutions
- Designed to facilitate safe and appropriate prescribing



Research Question and Objectives

Research Question

What direct impacts of e-prescribing have been experienced related to opioids?

Objective 1

To examine how e-prescribing has been used clinically

Objective 2

To examine the effects of e-prescribing of opioids on clinical outcomes, experiences, service delivery and policy

Objective 3

To identify any gaps in the literature to inform future studies and/or recommendations

Overview of Methods



**Protocol and
Registration**



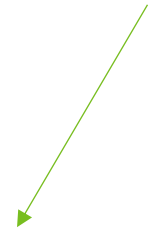
Eligibility Criteria



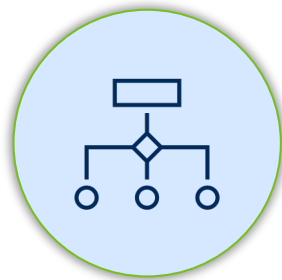
Information Sources



Search



Synthesis of Results



Data items and Charting



Selection of Evidence

Eligibility and Study Selection

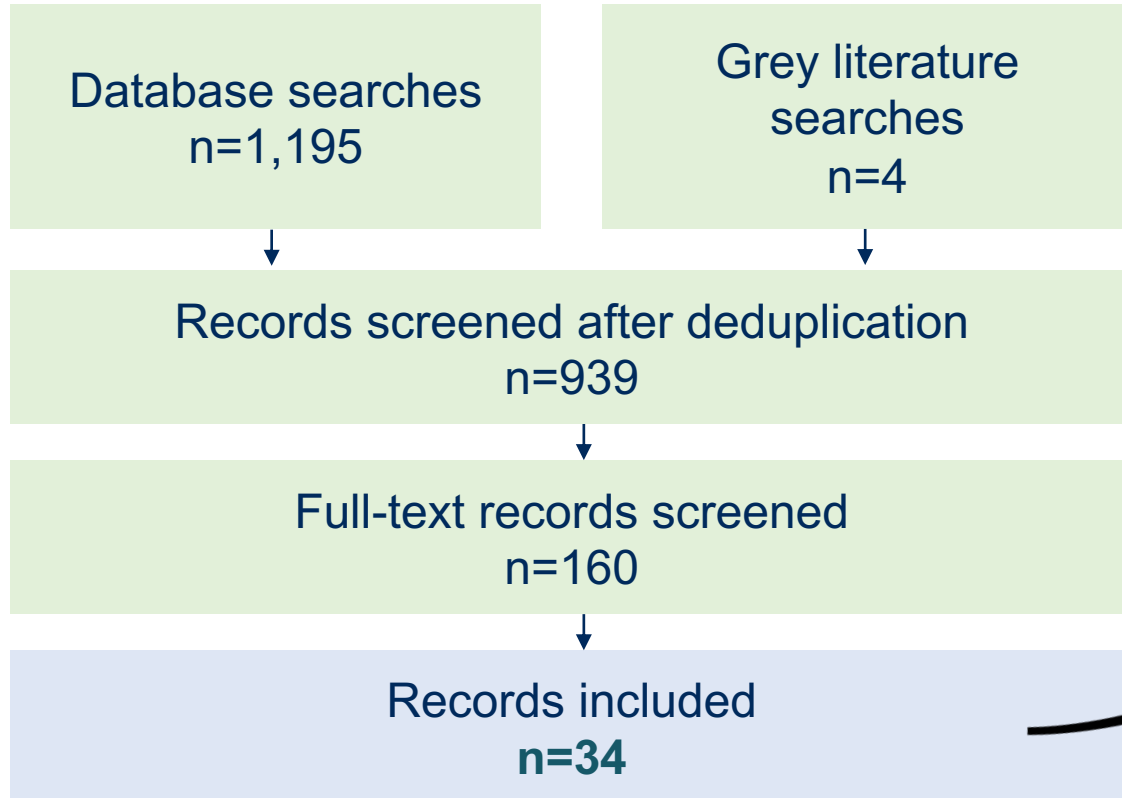
Articles were included if they were/focused on:

1. E-prescribing programs that targeted opioid use/misuse
 - including those accompanied or complemented by clinically focused initiatives
2. Primary research studies or grey literature (reports only)
3. During **full-text screening only**, the evidence must include an ambulatory component

Results:

Identified Evidence and Summary of Findings

Identified Evidence (n=35)



Objective 1

Clinical Use



- Limited number of studies available that fit criteria
- Most cases of e-prescribing were initiated within acute care or affiliated outpatient clinics
- Only one study provided evidence on e-prescribing in a primary care setting
- Minimal reporting of clinical populations and socio-demographic information



Objective 2

Effects on Outcomes*

- Large variation of outcomes, which included:
 - Opioid prescribing rates
 - Alerts (e.g., adverse drug events, drug-drug interactions, etc.)
 - Quantity and duration of opioid prescriptions
 - Adoption of e-prescribing technology
 - Attitudes towards e-prescribing
- Promising evidence regarding e-prescribing reducing the occurrence of prescriber error
 - Use of alerts and order sets had a favourable effect with error reduction

~~ERROR~~

*Articles were not critically appraised, caution with interpretation of effects on outcomes

Objective 3

Implementation Considerations

The five domains of CFIR in context of rapid review:

1. **Intervention Characteristics:** Characteristics of e-prescribing
2. **Inner Setting:** Features of implementing organizations (hospitals, community pharmacies)
3. **Outer Setting:** External context/environment such as patient needs and resources
4. **Characteristics of Involved Individuals:** Knowledge and attitudes of clinicians and patients (such as first-time opioid use versus chronic use)
5. **Implementation Process:** Strategies that influence implementations such as quality and extent of planning, engagement of stakeholders and workflow impact

² Damschroder et al. (2009). *Implement Sci.*

Objective 3

Outcome Considerations

- Lack of consistency in reported outcomes
- Unclear whether outcomes align with potential quality indicators
- Absence of perceptions of e-prescribing for opioids from a qualitative lens
- Can inform meaningful outcomes and indicators of quality prescribing

Example of problematic outcomes:

1. **Non-adherence:** Important to consider when medication is taken as needed vs on schedule
2. **Discontinuation:** Timing of discontinuation is important to consider (same-day vs within a period)

Objective 3

Gaps

- More work is needed to understand **implementation considerations and outcomes** for e-prescribing to inform adoption and scalability



Recommendations for Future Research



Examine the impact of e-prescribing of opioids in community and primary care settings



Explore the perspectives, experiences, and outcomes for different stakeholders (prescribers, clinicians, pharmacists, etc.) through mixed-method or qualitative methods



Create, implement, and evaluate of a set of quality indicators that can be applied consistently



Questions?

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