



Canadian Network for Observational Drug Effect Studies (CNODES)

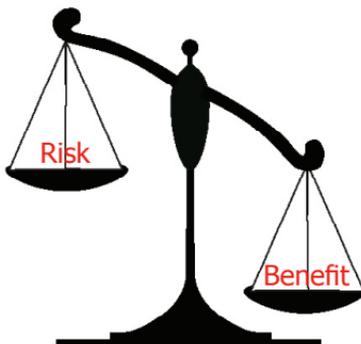
More than 60,000 Canadians are hospitalized each year because of an adverse reaction to a prescription drug.¹

An estimated 12% of emergency room visits in Canada are due to an adverse drug reaction – 70% of these are potentially preventable.²

CNODES researchers across Canada are transforming this reality by:

 **Evaluating the risks of adverse effects that occur after a drug is marketed.**

 **Building the capacity to better study drug safety and effectiveness.**





Our purpose

More information is needed on the safety and effectiveness of drugs in the marketplace.

Adverse drug effects are serious, often deadly. Information about these events comes from clinical trials conducted before a drug is approved for market. These trials, based on relatively small populations, may not be able to identify less common, but potentially severe adverse events.

In Canada, to date, population-based studies of these risks have been conducted using a single provincial healthcare database.

CNODES steps in with a more powerful approach. We use post-approval surveillance to identify and address questions of safety and effectiveness across multiple healthcare databases.

Our process

Our research process is rigorous, using state of the art methods.

1. Research questions are prioritized by the Drug Safety and Effectiveness Network (DSEN).
2. A study team prepares an analytic protocol using cutting-edge scientific techniques.
3. Each centre conducts an independent analysis in their database.
4. A central team prepares a summary analysis across databases.

Learn more about the query submission process here: www.cihr-irsc.gc.ca/e/40269.html



Dr. Samy Suissa, CNODES Lead Investigator



Inside CNODES

- CNODES is a national network of researchers across Canada. Our members are experts in epidemiology, medicine, pharmacology, bio-statistics and data analysis.
- We have access to anonymized healthcare and prescription records of more than 40 million people. This enables us to conduct comprehensive assessments of the potential benefits and risks of specific drugs.
- We work in four collaborative teams: Methods, Training, Database, and Knowledge Translation.
- We use data from seven provincial databases and two international databases to answer important questions about drug-associated adverse events (Figure 1).

Our unique contribution

CNODES is enhancing Canada's capacity for drug surveillance research with:

- Sophisticated analytical methods, data infrastructure, and a widely distributed research network;
- Fast and effective access to large healthcare databases;
- Advanced research personnel and graduate student training and development; and
- Extensive information sharing with healthcare providers, patients, decision-makers, and others.

Be part of the team.

Join CNODES as a trainee, clinician, or researcher. CNODES provides training funding for graduate students and post-doctoral fellows. Take the first step now, visit www.cnodes.ca/training.

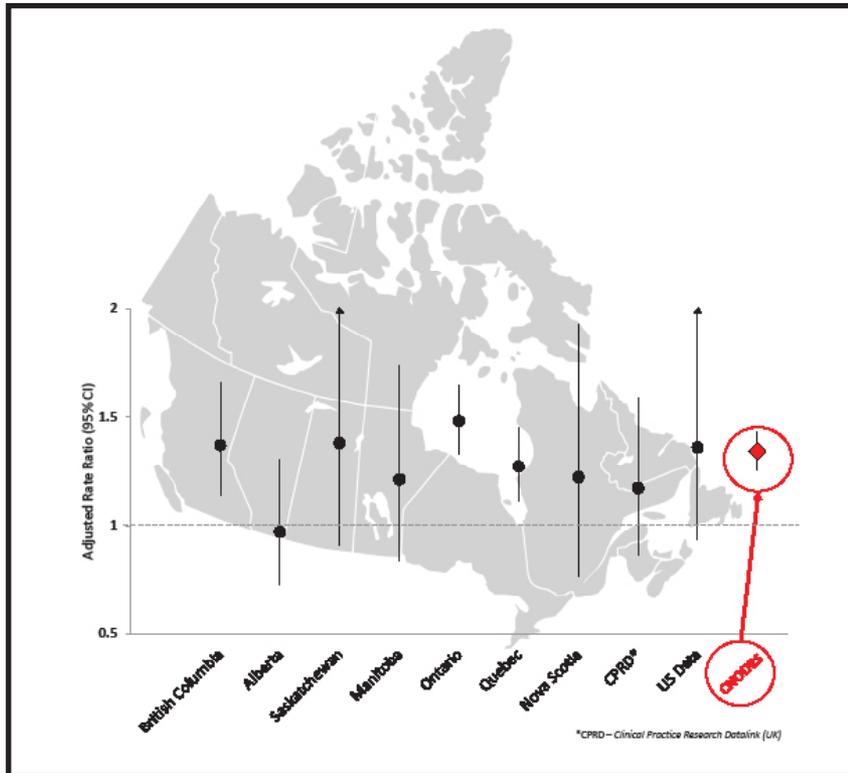


Figure 1
A CNODES study examining the association between statins and acute kidney injury³

Large-sized populations are essential when studying infrequently used drugs or drugs causing rare adverse events that may not be identified in smaller studies at single sites. The CNODES Coordinating Centre relies on data from multiple sites. We use cutting-edge statistical techniques to more precisely quantify health outcomes of interest.

Our results

CNODES researchers make a difference – for healthcare professionals, for decision-makers, for Canadians. Here's one example of the impact we've made.

Issue: Are high potency statins - drugs used to lower cholesterol, associated with serious adverse effects on the kidney?

Analysis: Our researchers examined the records of two million people to assess the association between treatment with high versus low potency statins and hospitalization for acute kidney injury in patients with and without chronic kidney disease.

Outcome: The use of high-potency statins is associated with an increased risk of acute kidney injury, compared to low potency statins. The effect is strongest in the first 120 days after treatment.

Enhancing available evidence

The Drug Safety and Effectiveness Network (DSEN) (www.cihr-irsc.gc.ca/e/40269.html) was established to enhance the evidence available on the safety and effectiveness of approved pharmaceuticals.

CNODES, one of DSEN's collaborating centres, addresses these issues head on and provides relevant, current, evidence-based information.



Our power is in the experts and the numbers.

- 40 million healthcare records
- 7 Canadian databases
- 2 international databases
- Immeasurable expertise and experience



Visit us at www.cnodes.ca

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CNODES is a collaborating centre of the Drug Safety and Effectiveness Network (DSEN) and is funded by the Canadian Institutes of Health Research (CIHR, Grant #DSE-111845).



¹ CIHI (2013). https://secure.cihi.ca/free_products/Hospitalizations%20for%20ADR-ENweb.pdf

² Zed et al. (2008). *CMAJ*, 178(12):1563-9.

³ Dormuth et al. (2013). *BMJ*, 346:f880.