

# Anonymized Longitudinal Data: Ground-Breaking Insights for Canadian Healthcare



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For years, the core measures for evaluating and predicting pharmaceutical product consumption has been the volume of new prescriptions and the volume of total prescriptions dispensed. That information provides governments as well as pharmaceutical industry executives the clues to planning for the coming years. It provides a clear picture of how Canadians are being treated in terms of drug consumption, but it doesn't tell the entire story.

To get the whole story, it is important to know more about the prescription activity of patients over time. That is de-identified longitudinal data (LRx), it can provide powerful insights on disease treatment in Canada and evolving healthcare issues for governments, academics and pharmaceutical manufacturers.

## What is LRx?

LRx is a powerfully diverse and increasingly influential decision-making tool. While its practical application is comparable to prescription-dispensing data, LRx is a longitudinal history of de-identified but unique patients collected by IMS spanning nearly half of all dispensed prescriptions in Canadian pharmacies to obtain the most complete picture of therapeutic treatment choices. LRx data can help answer precise and global questions about the disease state of Canadians and their pharmaceutical therapies.

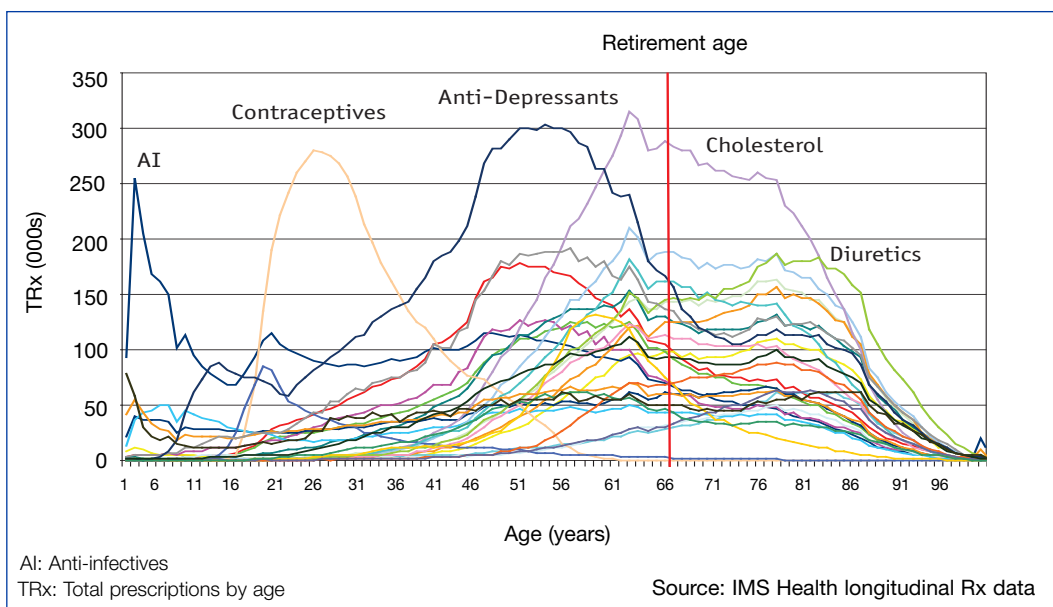


Figure 1. Prescription drug treatment of Canadians by therapeutic class.

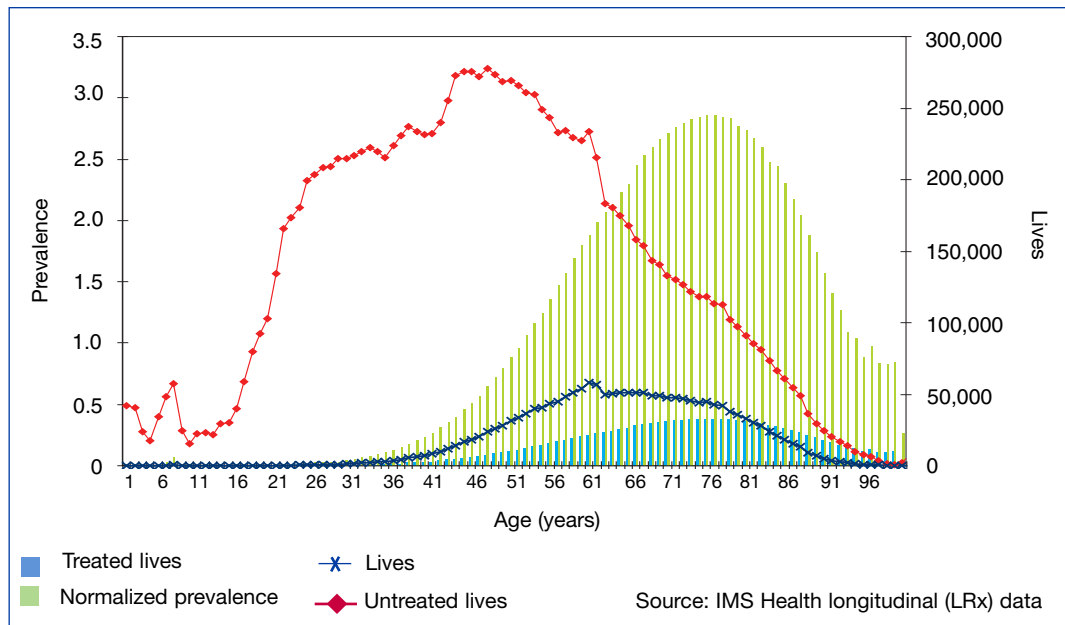


Figure 2. Hyperlipidemia treatment prevalence (and lives) in Canada by age.

### Answers to questions yet to be asked

While the traditional prescribing analysis within a therapeutic area provides insights in terms of drugs and dosages prescribed in a therapeutic class, longitudinal prescription information also includes demographic data (age, gender and geography) associated with these therapeutic treatments. What this means is that researchers now have a means to look at the most important disease states and their estimated prevalence in Canada.

This allows them to subtly shift the focus from the analysis of patients within a therapeutic class, to the analysis of patients across therapeutic classes by age, gender and geography—providing insights of unparalleled quality, heretofore unavailable.

As shown in Figure 1, the therapeutic classes of relevance over the course of the lifetime of Canadians vary by patient age (the vertical red line reflects a typical retirement age of 65). At first glance, this finding may not be especially revealing, but the ability to analyse this information provides significant insights for decision

makers in both government health agencies and the pharmaceutical industry.

To demonstrate the value of LRx information, IMS has studied the treatment of hyperlipidemia, by looking at the LRx data, it is not only possible to know at precisely what ages Canadians are starting treatment (Figure 2), but we can also see the geographic usage variations in Canada of cholesterol-reducing medication (Figure 3).

### Store-based source of LRx data is key to its accuracy

The drug store vs. claims approach to data collection is founded on studies showing that most insurance claims data suffers from high churn of lives, therefore diminishing its ability to provide meaningful and precise longitudinal insights. The reasons are varied, but include high employee turnover by province (ranges from 48% in Ontario to 92% in Prince Edward Island), meaning the insured patient has either lost coverage or has started with a new insurer.

Additionally, since up to 30% of employer health plans are renegotiated

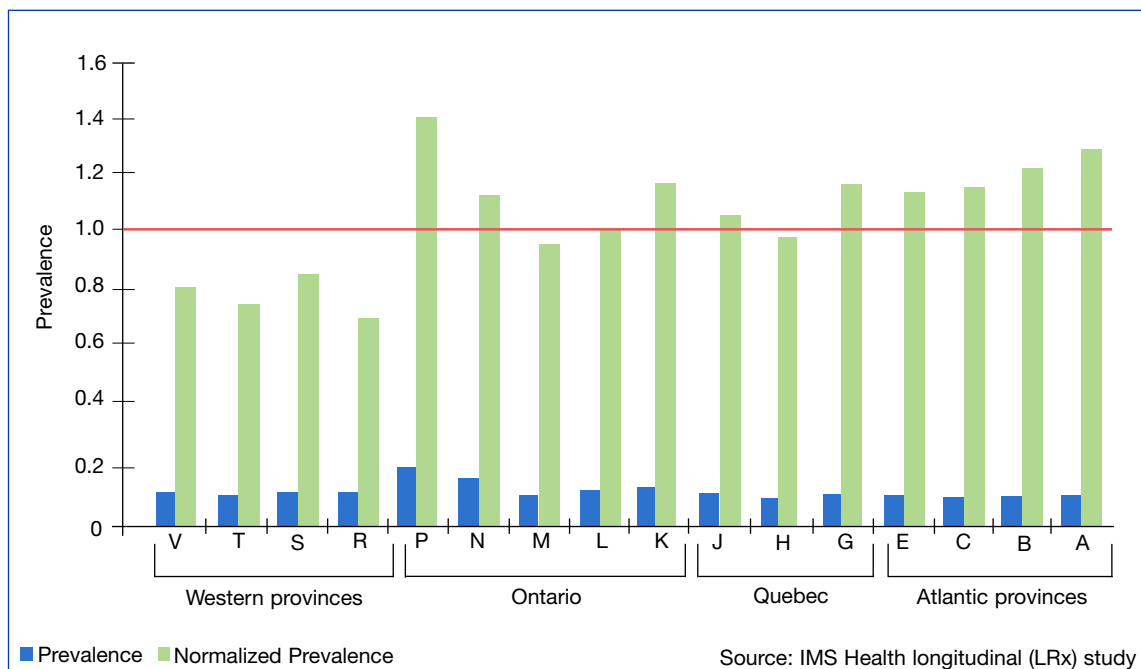


Figure 3. Hyperlipidemia treatment prevalence in Canada by geographic region. Cholesterol reducers by first-digit postal code.

annually, this places a corresponding amount of lives in a state of flux. When you factor in retirements resulting in transitions from private to government plans, the one information source that remains stable and reliable is the local pharmacy.

At its finest level, LRx information also provides a more accurate breakdown of prescriptions, yielding insights on new therapeutic class starts and product switching. In addition, the data provides a picture of concomitant treatments, patient compliance and even inferred indication based on information on concomitant use, titration, patient age and gender, or initiation at a specific strength.

### Looking ahead

At some level, the results of this longitudinal analysis have been no less than stunning in terms of insights provided and the information quality itself. This new information source could accurately quantify the size of looming healthcare issues, guide public policy, track changes over time and potentially drive pharmacoeconomic analyses leading to answers about how to keep Canadians out of hospitals and long-term care facilities.

While experts agree on the inherent value such information presents, there is still tremendous untapped potential to apply LRx in new and innovative ways. Such insights will change our understanding of the impact of pharmaceutical products and other medical interventions on the quality and cost of healthcare and ultimately the advancement of evidence-based health for Canadians. For a copy of the full study, please contact IMS. **CPM**