

# **Canadian Provincial Administrative Health Data for Research:**

**It's Better in Alberta**

## Key Messages

- Available holdings and access to administrative health data vary by province in Canada
- Alberta's administrative health data cover 4.2 million residents and include longitudinal pharmacy-level data on prescription drugs and province-wide laboratory data.
- Third-party researchers, such as Medlior, have direct access to deidentified administrative health data in Alberta for ethics-approved industry-sponsored research

## Abstract

Canada contains a wealth of administrative health data due to its universal healthcare system. Since healthcare in Canada is governed at the provincial level, the administrative health data available, and access to the data vary greatly between provinces. Compared with other provinces, Alberta has superior data for industry-sponsored research. Alberta's administrative data holdings cover over 4.2 million residents and include pharmacy-level data, such that all prescription drugs dispensed in the province are captured, in addition to province-wide laboratory data. There is also efficient access to the data in Alberta for third-party researchers, such as Medlior, with deidentified data released directly to Medlior upon ethics approval. Medlior is experienced with using Albertan administrative health data for research studies and can assist with real-world evidence projects from start to finish.

## Introduction

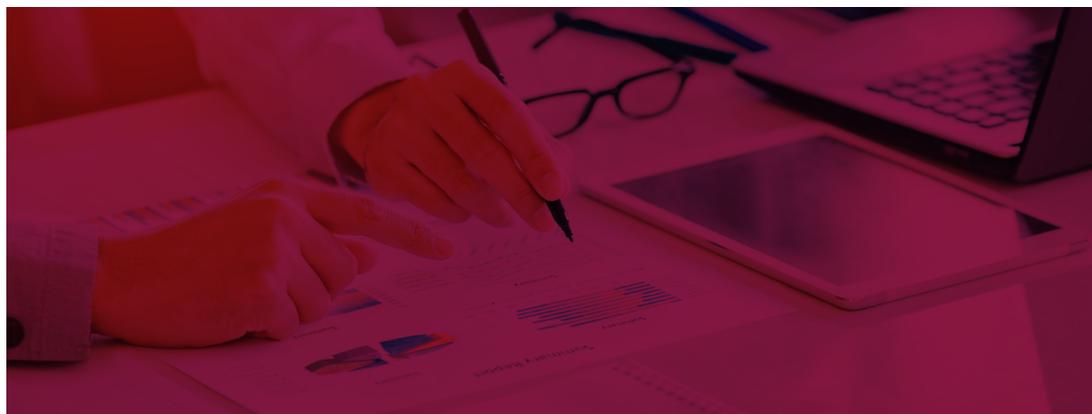
The increased use of [real-world data in health research](#) and [health technology assessment](#) submissions provides evidence that there is a growing interest in utilizing administrative health datasets in Canada for research studies. Compared with the rest of the world, Canada's universal, publicly-funded healthcare system provides a unique opportunity for researchers to capitalize on the high-quality administrative health data that is captured across the nation. Importantly, healthcare in Canada is governed at the provincial level, with each province governing the available data for research purposes independently. As such, available data holdings, data elements, and date ranges of captured data vary across provinces. In terms of data available and data access requirements, the aim of this white paper is to demonstrate why Alberta health data remains superior for industry-sponsored research

in Canada. Alberta's comprehensive coverage and straightforward access to data for Alberta-based, third-party researchers, such as Medlior Health Outcomes Research Ltd., provides extensive opportunities to inform decision-making with patient-oriented research.

Differences in the methods for capturing data within each province also create inherent difficulty when attempting to pool data between provinces for analysis. Due to these variations across provinces, "Canadian data" for health research purposes does not exist. Thus, we must consider Canada as Europe (without the culture), with each province being its own "country" for health data. To provide more thorough information regarding these differences Medlior recently investigated the administrative health datasets available across provinces. A summary is presented in Table 1. The following discussion will highlight the benefits and drawbacks of using health data from each province for industry-sponsored research, again, demonstrating why Alberta has superior data for industry-sponsored research.

## Available Data

Most provinces have datasets that cover health services such as inpatient hospital stays, ambulatory care, and physician claims. Data on inpatient hospital stays are collected in the Discharge Abstract Database, and data on ambulatory care (outpatient, emergency department visits) are collected in the National Ambulatory Care Reporting System in each province (excluding Quebec). Data collected within these databases tends to be more consistent across provinces due to a requirement that all data are reported to the Canadian Institute for Health Information to provide national-level information on health systems in Canada. Additionally, across provinces, information is available regarding prescription drug claims or dispenses, although these data vary between provinces. For British Columbia (BC), Alberta, Saskatchewan, Manitoba, and Prince Edward Island (PEI), these data are available at the pharmacy level, such that data from all drugs dispensed from community and hospital outpatient pharmacies are captured. In contrast, only drug claims from public prescription drug coverage programs are captured in Ontario, Quebec and Nova Scotia. In addition, data related to health insurance in provincial public plans, long-term care, home care and vital statistics (mortality and births) are available in most provinces. Lastly, most provinces capture additional datasets, such as cancer registries or laboratory services data, that can be made available for research purposes.



# Advantages and Disadvantages of Data in Each Province

Ontario and Manitoba have the largest number of administrative datasets, with 74 and 59 datasets available, respectively. These datasets provide ample research opportunities because they can be confidentially linked using personal health identification numbers. In terms of population coverage, Ontario (population = 14.0 million) and Quebec (population = 8.3 million) are the two largest provinces. The provinces with the most complete data amongst their residents for research purposes are Alberta, Manitoba and PEI, because of the province-wide laboratory and prescription drug claims data at the pharmacy level. However, population sizes are limited in Manitoba (population = 1.3 million) and PEI (population = 150,000). Alberta has 4.2 million residents with complete data for the previous 10 years, depending on the dataset, for research use. It is also important to note that data access requirements in Manitoba are much more stringent (detailed below), thus the use of Manitoba data may present barriers to industry-sponsored research.

Comprehensive province-wide data are limited across provinces, particularly for laboratory and pharmaceutical data. To our knowledge, only Alberta, Manitoba and PEI have province-wide laboratory data available. While Ontario has the highest number of linkable datasets available through a singular source, the Institute for Clinical Evaluative Sciences (ICES), it is limited by the lack of province-wide laboratory data (approximately 85% population coverage) and only contains data from public plan drug claims. Similarly, Saskatchewan, Quebec and Nova Scotia, only capture data from drug claims through public provincial drug plans. [Drug coverage](#) through public or private plans varies greatly across provinces in Canada, thus only drug claims from an estimated 54.5, 24.1, 43.6 and 19.9% of the populations of Saskatchewan, Ontario, Quebec and Nova Scotia, respectively, are available in their pharmaceutical datasets.<sup>1</sup>

## Data Access and Dissemination

With respect to accessing datasets for independent third-party researchers (i.e. Medlior), individualized data are directly available for analysis, reporting and dissemination to the public in Alberta, BC, Nova Scotia and PEI. All data are deidentified by the corresponding Data Custodian (BC: BC Ministry of Health/Population Data BC; Alberta: Alberta Health; Nova Scotia: Health Data Nova Scotia; and PEI: Health PEI). Further, in all four provinces, province-by-province mandated research ethics approvals are required to request data. Access to data from BC, Nova Scotia and PEI is through a secure web portal for analysis, such that all data stay in the province. Although Medlior is based in Alberta, Medlior can analyze the data via the web portal. Locally in Alberta, data are released

directly to Medlior, as is the case for all researchers that reside in the province. Data are then securely housed for 7 years before they are destroyed. Importantly, dissemination of results to the public is a requirement for industry-sponsored projects in BC, Alberta and Nova Scotia, where the researcher (i.e. Medlior) is responsible for dissemination of results upon approval(s) from the necessary data owners.

In contrast, industry-sponsored research projects in Ontario and Quebec have data analyzed by the data custodians (ICES in Ontario and the Régie de l'assurance maladie [RAMQ] in Quebec) upon approval. In this case only aggregate results are released to the researcher. Since individualized data are not released to private sector researchers, timelines for projects are subject to the work capacity at ICES and RAMQ for completion of analyses, typically resulting in longer timelines for project completion. Similarly, all data analyzed by ICES and RAMQ require public dissemination, with ICES publicly posting results of each industry-sponsored research study on their website one year after completion.

Health data from Manitoba for industry-sponsored research requires partnering with the Manitoba Centre for Health Policy (MCHP) to develop a protocol, receive ethics approval, and perform all analyses. The principal investigator of all projects conducted with Manitoba data must be an MCHP-accredited Researcher. The MCHP Analyst and Researcher then provide results and assemble a report for the industry partner before releasing the research to the public. Manitoba projects also contain a caveat that industry has no control over the dissemination of the results from their research study and all results are ultimately released to the public. Lastly, while administrative health data in Saskatchewan are available for research, data access is considered on a case-by-case basis following a data request.



## Conclusion

Based on differences in data availability and access across Canada, Medlior firmly believes that administrative health data from Alberta remains superior for industry-sponsored research. Alberta is the fourth largest province in Canada, and provides data on over 4.2 million residents, with comprehensive, province-wide laboratory data and pharmacy-level data for all prescription drugs dispensed. Importantly, individualized deidentified data is directly released to researchers based in Alberta, such as Medlior. Therefore, the data analysis process is more timely and more efficient, with Medlior performing the analysis, rather than the data owners, who may have capacity issues and thus, longer wait times for results. Lastly, while results must enter back into the public domain (as per the Health Information Act in Alberta), the researcher is responsible for the dissemination of results, with the approval of Alberta Health. Thus, Alberta's administrative health data provides rich longitudinal data that provides expansive opportunity for industry sponsored research.

## About Us

As an independent Canadian consultancy based in Calgary, Alberta, Medlior offers a variety of research services, as well as access to and expertise with Canadian RWE databases. We collaborate with experienced biostatisticians and epidemiologists from academia and the health system to provide expertise in Canadian provincial and national data sets, surveys, and patient reported outcomes to answer your research questions.

Driven by scientific expertise and powerful analytics, Medlior brings value and insights to every research project by working in close partnership with our clients to understand their needs and objectives. Email us at [tara.cowling@medlior.com](mailto:tara.cowling@medlior.com) to set up an appointment and get more information on how we can customize our services to meet your research objectives, timeframes, and budgets.

## References

1. Sutherland G, Dinh T. Understanding the Gap: A Pan-Canadian Analysis of Prescription Drug Insurance Coverage. Ottawa, ON: The Conference Board of Canada, 2017.

**Table 1:** Administrative health data holdings available in each province in Canada

Province	Health Services			Pharmaceutical		Public Health Insurance	Vital Statistics	Long-term/ Home Care	Provincial Laboratory Data
	DAD	NACRS	Physician Claims	Pharmacy-level	Public plan only				
British Columbia	✓	✓		✓	✓	✓	✓	✓	
Alberta	✓	✓	✓	✓	✓	✓	✓	✓	✓
Saskatchewan	✓	✓	✓	✓	✓		✓	✓	
Manitoba	✓	✓	✓	✓		✓	✓	✓	✓
Ontario	✓	✓	✓		✓	✓	✓	✓	✓
Quebec	✓	✓	✓		✓	✓	✓		
New Brunswick	Information not available								
Nova Scotia	✓	✓	✓		✓	✓	✓		
Prince Edward Island	✓	✓	✓	✓			✓	✓	✓
Newfoundland & Labrador	Information not available								

**Note:** Public and private prescription drug coverage are not mutually exclusive. \*Not all residents are eligible for public prescription drug coverage and percentages represented are for total number of residents in the province.



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