



Pan-Canadian Prescription Drug Data Landscape

March 2024



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Executive summary

Prescription drug prices in Canada are among the highest in high-income countries and are expected to rise.¹ In February 2024, the federal government introduced Bill C-64, *An Act respecting pharmacare* (Pharmacare Act), setting out principles for national universal pharmacare to improve the accessibility and affordability of prescription drugs and related products, and to support their appropriate use, in collaboration with the provinces and territories, Indigenous Peoples, and other partners and stakeholders.⁴⁸ Currently, jurisdictions independently manage drug programs and the associated data behind them. Jurisdictions are at different stages with respect to data harmonization and integration initiatives, and face challenges related to technical infrastructure, legacy systems, data quality and standardization, paper-based manual data processes and staffing shortages. Targeted investment would support jurisdictions in meeting their diverse needs, which align with findings of the Pan-Canadian Health Data Strategy series of reports.⁵² To enhance the sustainability and future readiness of Canada’s drug system, Health Canada also announced the creation of the Canadian Drug Agency, in December 2023.² “Extensive consultation with jurisdictions and other key stakeholders identified the need for increasing pan-Canadian data collection and expanding access to drug and treatment data as real-world evidence to better support patients, inform health decisions and enable robust system data analytics.”² Collection and use of real-world evidence is also 1 of 4 pillars of the National Strategy for Drugs for Rare Diseases announced in March 2023, pointing to the consistent need for a strong prescription drug data foundation to support diverse health system analytics.³

The Canadian Institute for Health Information (CIHI) has a mandate to deliver comparable and actionable information to accelerate improvements in health care, health system performance and population health across the continuum of care. CIHI’s National Prescription Drug Utilization Information System (NPDUIS) lays the foundation for a pan-Canadian “All Drugs, All People” drug data system. It holds most prescription drug claims data for publicly funded drug programs in all jurisdictions except the Northwest Territories and Nunavut. NPDUIS also captures drugs paid through private drug plans or out of pocket in Manitoba, Saskatchewan and British Columbia. This data is linkable to other health administrative data

at CIHI, supporting analysis related to use, effectiveness and safety of pharmaceuticals. This is particularly true for drugs for rare diseases (DRDs) where pan-Canadian data is often required due to smaller patient populations in individual jurisdictions.

CIHI is advancing a 5-year Pharmaceuticals Data and Information Roadmap to modernize the NPDUIS data holding, build a comprehensive data foundation to address stakeholders' needs and priorities, expand data access and enhance analytics. This work will support health system planning and decision-making across federal, provincial and territorial (FPT) governments, as well as other organizations with decision-making needs in the drug space, including the Canadian Drug Agency.

This report outlines prescription data sources, gaps, limitations and opportunities across jurisdictions to support the future direction of CIHI's Pharmaceuticals Data and Information Roadmap. The goal is to fill data gaps in publicly funded drugs, privately funded drugs, DRDs, cancer treatments and drugs administered in hospital and move toward an All Drugs, All People data system. Results highlight several opportunities for more readily available data as well as the need for updated data standards and modernization of NPDUIS. Building on the findings from this report, CIHI will advance the drug data foundation by engaging with jurisdictions as partners to ensure the data foundation can meet diverse pan-Canadian needs.

Introduction

Background

Prescription drug prices in Canada are the third highest among the Organisation for Economic Co-operation and Development (OECD) countries and are expected to rise. Due to these rising drug prices, many Canadians encounter significant obstacles in accessing necessary medications.⁴ A key component to effectively managing rising costs is the establishment of a strong prescription drug data foundation that covers Canada's population and all prescription drugs, regardless of payer or service provider — an “All Drugs, All People” data system. An enhanced data foundation could be used for international benchmarking to promote global collaboration and knowledge-sharing across OECD countries. However, at present, a considerable portion of prescription drug data in Canada is decentralized and challenging to access.

The Canadian Institute for Health Information (CIHI) maintains the National Prescription Drug Utilization Information System (NPDUIS) data holding, which lays the foundation for a pan-Canadian All Drugs, All People data system. From NPDUIS, CIHI provides key pan-Canadian information on drug utilization and cost trends to federal, provincial and territorial (FPT) partners and other stakeholders. At present, NPDUIS holds post-market drug records from most publicly funded drug programs, as well as a portion of records related to privately funded drugs. Data in NPDUIS can be linked to CIHI's other data holdings, including those related to primary care, hospitals and long-term care, to inform critical health system planning and decision-making across Canada.

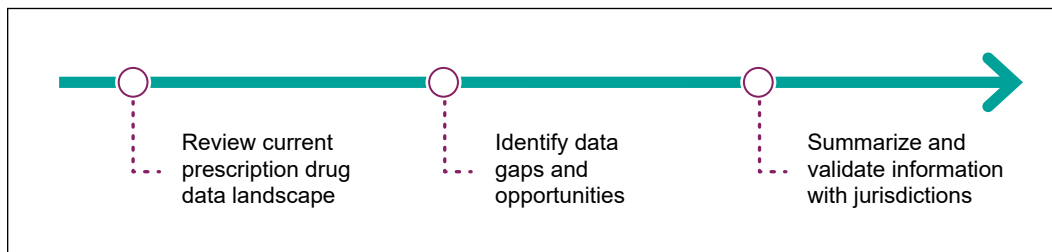
In 2021, CIHI completed a product review to ensure that its pharmaceutical data holdings and products can meet the evolving needs of its stakeholders.⁵ The results of the product review confirmed that NPDUIS continues to be a trusted, respected and valuable source of drug information. CIHI's stakeholders have expressed an increasing interest in accessing comprehensive pan-Canadian drug data, with improved data access and an ability to conduct linked analysis at a person level. Based on the product review feedback, CIHI is advancing a 5-year Pharmaceuticals Data and Information Roadmap to modernize NPDUIS, build a comprehensive All Drugs, All People data system, expand data access and enhance analytics. This work will support health system planning and decision-making by FPT governments, as well as other organizations such as the Canadian Drug Agency.⁶

About this report

This report summarizes information about prescription drug data in Canada (assets, needs, gaps, limitations and opportunities) by jurisdiction (provinces, territories and Indigenous Services Canada). The information in this data landscape report will inform a comprehensive plan to enhance prescription drug data and information products at CIHI in alignment with jurisdictional priorities and readiness in terms of technical interoperability, data standards and resources.

The scope of this report is to identify available sources of prescription drug data in Canada, in 5 categories of data that are not mutually exclusive: public drug programs; private drug plans; drugs for rare diseases (DRDs); cancer drugs; and drugs administered in hospitals. The report also examines drug data availability and data gaps within jurisdictions in relation to stakeholder information needs. It excludes detailed information on data elements, data standards in use, clinical trial data, federal drug programs (with the exception of the Non-Insured Health Benefits program) and data collected by private organizations.

This report outlines prescription data sources that could contribute to 1 or more categories in an All Drugs, All People data system. With acknowledgement of the possibility of excluding non-electronic or hard-to-find data assets, the review was completed through a 3-step approach:



1. Review current prescription drug data landscape

- Identify jurisdictional organizations, data custodians and data holdings that can support at least 1 of 5 data categories in an All Drugs, All People data system.

2. Identify data gaps and opportunities

- Assess current NPDUIS data to identify gaps and opportunities for expansion.
- Conduct review of prescription drug data sources in step 1 through online content, publications, grey literature, public drug program websites⁷ and pan-Canadian health organization literature.

3. Summarize and validate information with jurisdictions

- Engage with relevant stakeholder groups, including jurisdictional drug plan managers, health ministries, health authorities and others, to inform them about CIHI's Pharmaceuticals Data and Information Roadmap and validate findings on prescription drug data assets.

As part of the Pharmaceuticals Data and Information Roadmap for an All Drugs, All People data system, CIHI initiated a multi-stakeholder engagement process in early 2023 to build consensus and validate findings. Through the engagement process, CIHI met with most provinces and territories. CIHI will continue to conduct consultations with FPT organizations to identify data sources, gaps, limitations and opportunities that support jurisdictional health priorities. Moreover, to implement its corporate strategy for data advancement, CIHI regularly collaborates with stakeholders across Canada to ensure CIHI's data holdings and data reflect stakeholders' health information priorities.

Findings

Pan-Canadian level

Currently, jurisdictions have their own publicly funded drug insurance plans, resulting in a patchwork of public and/or private coverage across the country. The population covered and the extent of coverage vary significantly between jurisdictions. However, most jurisdictions have drug programs that are designed for specific populations (e.g., seniors, people with low incomes) and/or that are disease-specific (e.g., cancer, rare diseases). In addition, many Canadians have private insurance plans through their employer, but some Canadians with no private insurance will pay the full cost of prescription drugs. Canadians in hospitals receive prescription drugs at no cost under the *Canada Health Act*.¹ In February 2024, the federal government introduced Bill C-64, *An Act respecting pharmacare* (Pharmacare Act), setting out principles for national universal pharmacare.⁴⁸ This bill highlights the Government of Canada's commitment to collaborating with the provinces and territories to offer universal, single-payer coverage for selected contraception and diabetes medications.⁴⁸

From 2018–2019 to 2022–2023, total spending on prescription drugs by Canada's public drug plans increased from \$14.1 billion to \$17.4 billion, an annual increase of 5.5%.ⁱ Rising drug costs in Canada over the last decade have resulted in 1 in 5 Canadians being unable to afford their medications.⁸ Rising costs for drugs (including DRDs), drug access and variation in drug formularies across jurisdictions and private insurance plans are major challenges to overcome to provide better health care to Canadians. A comprehensive pan-Canadian drug database is needed to support analytics in order to provide information to policy-makers to

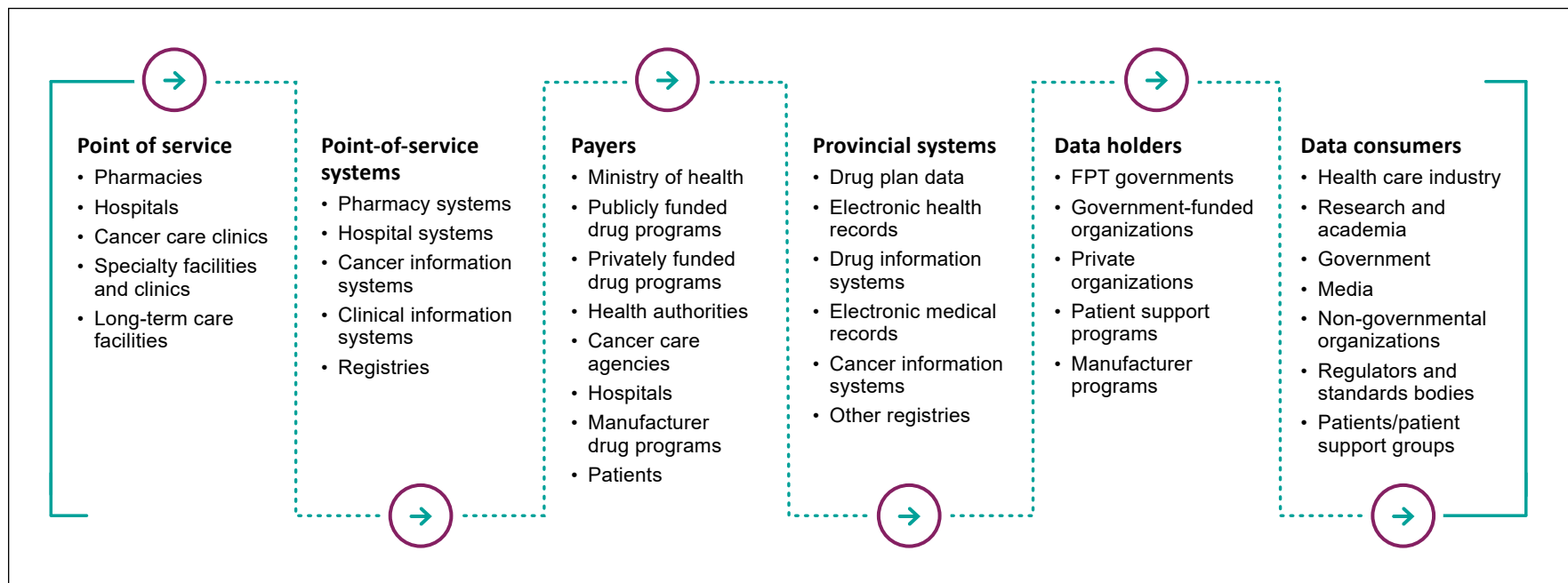
- Compare formularies and understand drug plan eligibility criteria;
- Understand and compare utilization trends;
- Understand and compare drug costs;
- Conduct pan-Canadian outcomes research; and
- Conduct cost-effectiveness and post-market drug analyses.

i. National Prescription Drug Utilization Information System, Canadian Institute for Health Information.

Prescription drug data overview

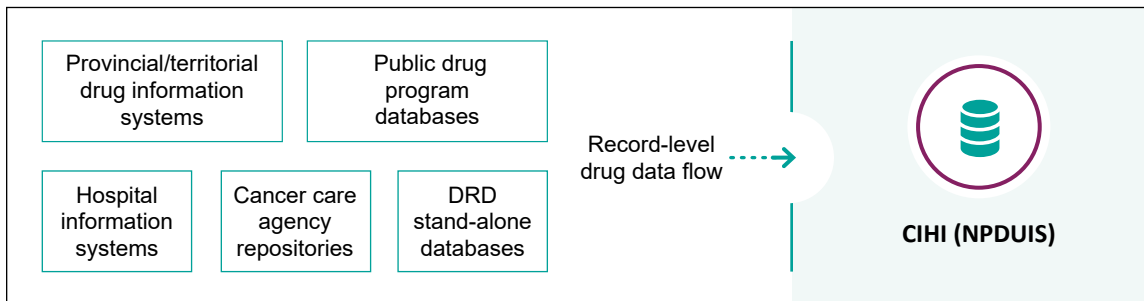
In Canada, each jurisdiction has its own health care system, and these vary in data collection methods and requirements. Additionally, health care service providers and facilities, such as pharmacies and hospitals, maintain their own data holdings. Figure 1 illustrates the overall flow of information regarding prescription drug coverage and data across different points of service, payers, providers, data holders and data consumers.

Figure 1 Overall prescription drug data landscape



It is important to note that most of these systems do not contain comprehensive data and may not be interoperable or able to exchange information between them. Over the past decade, although jurisdictions have been actively working toward creating integrated electronic health records (EHRs), there have been challenges in terms of data quality and scattered data across various systems. Data digitalization, data interoperability and efficient data for analytics are key priorities for many jurisdictions. The Pharmaceuticals Data and Information Roadmap aims to tackle this challenge by modernizing and enhancing NPDUIS to establish a solid and comprehensive drug data foundation at CIHI. Similar challenges regarding interoperable, comprehensive health data are identified across most jurisdictions and include infrastructure set-up, maintenance costs, lack of technical support and data quality concerns. Figure 2 outlines a number of general potential data providers to support the All Drugs, All People data system, highlighting the multiple systems often involved in collecting drug data.

Figure 2 Potential drug data providers to CIHI



Current state of NPDUIS

CIHI collects pharmacy claims data and formulary data through NPDUIS, focusing primarily on publicly funded drug benefit programs (Table 1). Manitoba, Saskatchewan and British Columbia submit information to NPDUIS about drugs that are dispensed through a community pharmacy and funded both publicly and privately. Ontario submits a smaller subset of privately funded drug data through the Narcotics Monitoring System. CIHI holds data on approximately 20% of all privately funded claims in Canada.

NPDUIS holds data on DRDs and oral cancer drugs that are covered by public drug plans in some jurisdictions. Population coverage varies by jurisdiction, as some publicly funded programs provide more comprehensive coverage for seniors and specialty populations. The majority of NPDUIS data is linkable to most data holdings across CIHI (see [Appendix A](#)).

As shown in tables 1 and 2, NPDUIS contains claims and formulary data on most public drug programs from 10 provinces, 1 territory and 1 federal drug program. Both types of data are needed and used by stakeholders to gain valuable insights into the utilization of drugs, identify areas for cost management and develop policies to promote better health outcomes.

Table 1 Prescription drug data coverage in NPDUIS, by data category and jurisdiction

Jurisdiction	Earliest data year available	Publicly funded drugs	Privately funded drugs	Drugs for rare diseases	Cancer drugs	Drugs administered in hospital
N.L.	2008	Majority	FDO	Limited	Limited	FDO
P.E.I.	2004	Partial	FDO	Limited	Limited	FDO
N.S.	2001	Partial	FDO	Limited	Limited	FDO
N.B.	2000	Majority	FDO	Limited	Limited	FDO
Que.*	2014	Complete	FDO	Limited	Limited	FDO
Ont.†	2010	Majority	Limited	Limited	Limited	FDO
Man.	2000	Complete	Complete	Limited	Limited	FDO
Sask.	2000	Complete	Complete	Limited	Limited	FDO
Alta.	2000	Partial	FDO	Limited	FDO	FDO
B.C.	2006	Majority	Complete	Limited	Limited	FDO
Y.T.	2007	Majority	FDO	Limited	Limited	FDO
N.W.T.	n/a	FDO	FDO	FDO	FDO	FDO
Nun.	n/a	FDO	FDO	FDO	FDO	FDO
ISC*	2000	Complete	n/a	Limited	Limited	n/a

Notes

* Quebec and Indigenous Services Canada data collected for specific purposes only.

† Privately funded drug data from Ontario's Narcotics Monitoring System only.

FDO: Future data opportunity.

n/a: Not applicable.

ISC: Indigenous Services Canada.

Source

National Prescription Drug Utilization Information System, 2023, Canadian Institute for Health Information.

Formulary data landscape

A drug formulary is a list of prescription drugs and other products that are eligible to be paid for through a drug program (public or private), cancer care agency or hospital.⁴⁹ Drug formularies are managed to support drug pricing, an accurate listing of cost-effective and clinically effective drugs, restricted access to high-cost drugs and a consistent supply, and to provide the continuum of patient care across health care settings. Formularies commonly contain the drug or product description, information on interchangeable drugs and products, and other information to support the prescribing, dispensing and administering of the product.⁴⁹ The drugs that are covered may vary according to the type of formulary:




- **Public formularies:** All provinces, territories and some federal departments offer public drug benefit programs and have their own formulary. Drug coverage across jurisdictions varies depending on eligibility and programs. These formularies are publicly available on jurisdiction websites. Currently, NPDUIS holds formulary data for all provinces and the Yukon, as well as 1 federal public drug program administered by the First Nations and Inuit Health Branch (FNIHB) at Indigenous Services Canada (ISC). The frequency of formulary updates to NPDUIS (monthly or quarterly), collection method (submitted or downloaded) and specifications for public formularies vary across jurisdictions.⁹
- **Cancer formularies:** Coverage of cancer drugs can vary across jurisdictions based on funding mechanisms (i.e., hospital [see Hospital formularies below], public drug plan [see Public formularies above], cancer care agency and private drug plan [see Private formularies]). Injectable and oral cancer drugs are usually covered by cancer care agencies and the coverage information is available on their websites. Some jurisdictions cover oral cancer drugs and supportive drugs through their public drug plans and this information is generally available to the public.
- **Hospital formularies:** Hospital formulary data can vary across jurisdictions based on whether it is collected and centralized or decentralized (at the hospital, regional health authority [RHA] or jurisdictional level). Unlike the formularies of public drug programs, this formulary data is typically available internally on the intranet site of each hospital and is not accessible to the public.
- **Drugs for rare diseases formularies:** Currently, data on specific disease formularies is dispersed across systems and jurisdictions. DRDs are funded through various funding sources (each with their own formulary) and administered in various practice settings. Given this, formularies and coverage information for DRDs are not easily accessible in 1 place.
- **Private formularies:** Private drug plan formularies may vary depending on an organization's health plan and their insurance provider. These formularies are not publicly available.

Some jurisdictions have a single consolidated formulary that applies to all hospitals, while other jurisdictions have multiple formularies where each hospital or RHA has its own formulary list (see Table 2). It should be noted that hospital and/or health authority formularies may not be aligned with jurisdictional drug plan formularies. The lack of formulary alignment across various health service providers such as hospitals, cancer care agencies and drug plans leads to inconsistency of drug coverage for Canadians, which can affect continuity and quality of care.

Table 2 presents an overview of formulary data in Canada, and indicates whether it is publicly available or restricted, and whether it is centralized at the jurisdiction level or scattered across service providers.

Table 2 Prescription drug formularies by jurisdiction, type and availability

Drug formularies	Jurisdiction													
	N.L.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Y.T.	N.W.T.	Nun.	ISC
Public drug plans	A*	A*	A*	A*	A*	A*	A*	A*	A*	A*	A*	C*	C*	A*
Private drug plans	M†	M†	M†	M†	M†	M†	M†	M†	M†	M†	M†	M†	M†	n/a
DRD plans	†	†	†	C†	†	†	M†	M†	C†	M†	†	†	†	†
Cancer care	M†	M†	M†	M†	M†	M†	M†	C†	C†	C†	M†	—	—	†
Hospital	C†	C†	‡	C†	‡	M†	‡	‡	C†	C†	‡	‡	C†	n/a

 Publicly available  Somewhat available  Restricted availability

Notes

A: Data is available in the NPDUIS database.

C: Data is centralized at the jurisdiction level.

M: Data is maintained by multiple formularies/service providers in the jurisdiction.

— Further investigation is required.

n/a: Not applicable.

ISC: Indigenous Services Canada.

CIHI intends to compile available formularies into a comprehensive formulary list to support jurisdictions in making formulary decisions across service providers. An established formulary base at CIHI will support researcher and policy-maker insights into alignment of formularies within and across jurisdictions. It will also provide contextual information for analysis of NPDUIS data.

Acquiring data on drugs for rare diseases

At present, globally, between 6,000 and 8,000 rare diseases have been identified.¹⁰ These diseases are often chronic and can be seriously debilitating and potentially life-threatening.¹⁰ While each rare disease affects a small number of Canadians, collectively, rare diseases impact approximately 1 in 12 Canadians, including many children.^{10, 11}

Of the thousands of rare diseases, only a small percentage have treatments, and where treatments are available, there are often significant barriers to access.¹² The United States, Japan, Australia, the European Union and the United Kingdom have introduced various policies and strategies to support the development of new drugs for rare diseases (DRDs).¹³ In March 2023, Health Canada announced the creation of the National Strategy for Drugs for Rare Diseases and a \$1.5 billion investment over 3 years to improve Canadians' access to DRD treatments.³

The increase in the number of DRDs approved for the Canadian market over the past decade has had, and continues to have, an impact on our health systems and on patient care.¹² A comprehensive pan-Canadian data set on DRD utilization and spending is needed to support the National Strategy for Drugs for Rare Diseases and jurisdictions in making informed decisions on DRDs. However, DRD data in Canada is currently collected across different information systems. To help address this need, CIHI is working in collaboration with other organizations to provide a comprehensive snapshot of existing DRD data, opportunities and gaps as a key component of the All Drugs, All People data system.

This report identifies the available health administrative data on DRDs and assesses where advancements in data collection can be made more quickly and where standardization in data collection may be needed. Since most jurisdictions provide coverage for DRDs across multiple drug funding programs and/or mechanisms, DRD data is tracked in different systems within jurisdictions. Table 3 provides an overview of data repositories that hold DRD data in Canada and DRD data currently submitted to NPDUIS.

Table 3 Data repositories for DRD data in Canada and current data coverage in NPDUIS

DRD data repository	DRD data held in the repository	DRD data available in NPDUIS
Public drug program databases	Some jurisdictions have specific drug programs related to rare diseases or other coverage options such as income-based programs or cancer drug programs.	All jurisdictions except the N.W.T. and Nunavut currently submit limited DRD data through public drug programs, such as cancer drug programs, disease-specific programs or catastrophic drug programs.
Private drug program databases	These databases hold data about drugs that are financed privately (paid for either through private insurance or out of pocket) and dispensed through community pharmacies. Drug information systems (DIS) contain real-time medication history for prescriptions filled in any pharmacy. DRDs may be included in this data.	DRD data for Manitoba, Saskatchewan and B.C. is submitted mainly through their DIS. All Drugs, All People data could potentially increase the coverage of DRDs in NPDUIS, as private drug plans can sometimes be the first payer for DRDs.
Hospital information systems	Some DRDs are administered in hospitals. Detailed data on administration is available in clinical information systems (CIS) and/or in computerized provider order entry (CPOE) modules within hospital information systems. DRDs may be included in this data.	No coverage in NPDUIS at this time.
Cancer care agency repositories	Oncology drugs account for almost half of the DRDs in the Canadian market. Cancer care agency data repositories contain information on drugs administered for the treatment of cancer.	No coverage in NPDUIS at this time.
Special programs or stand-alone databases	Beyond DRDs captured in the categories above, there are additional DRDs that are adjudicated through paper-based claims and other formats, as well as those funded on a compassionate basis.	No coverage in NPDUIS at this time.

An All Drugs, All People data system aims to bring together data for DRDs found in non-standardized adjudication systems and stand-alone data assets across jurisdictions. CIHI's Pharmaceuticals Data and Information Roadmap for NPDUIS encompasses the DRD data that could be beneficial to jurisdictions' DRD strategies by

- Having a consolidated pan-Canadian data set on DRDs that impact a small patient population to support jurisdictions in addressing priority information needs;
- Providing more comprehensive, accessible data to support the generation of real-world evidence (RWE) that can inform formulary listings; and
- Leveraging RWE to answer questions about the use, safety and effectiveness of DRDs to inform funding decisions with a goal of improving patient access and outcomes.

Jurisdiction level

This section summarizes information on the current prescription drug data in NPDUIS, findings on prescription drug data assets and key points from jurisdictional engagements. It outlines CIHI's data strengths and data gaps; opportunities for CIHI to acquire external data; and technical and non-technical challenges related to prescription drug data. For each jurisdiction, the figure and table ("Overview of current and potential NPDUIS data sources" and "Data systems applicable to the All Drugs, All People data system") shed light on the organizations and data systems that collect prescription drug data, in relation to NPDUIS and the All Drugs, All People data system. The information focuses on 5 data categories; these categories are not mutually exclusive.

Newfoundland and Labrador

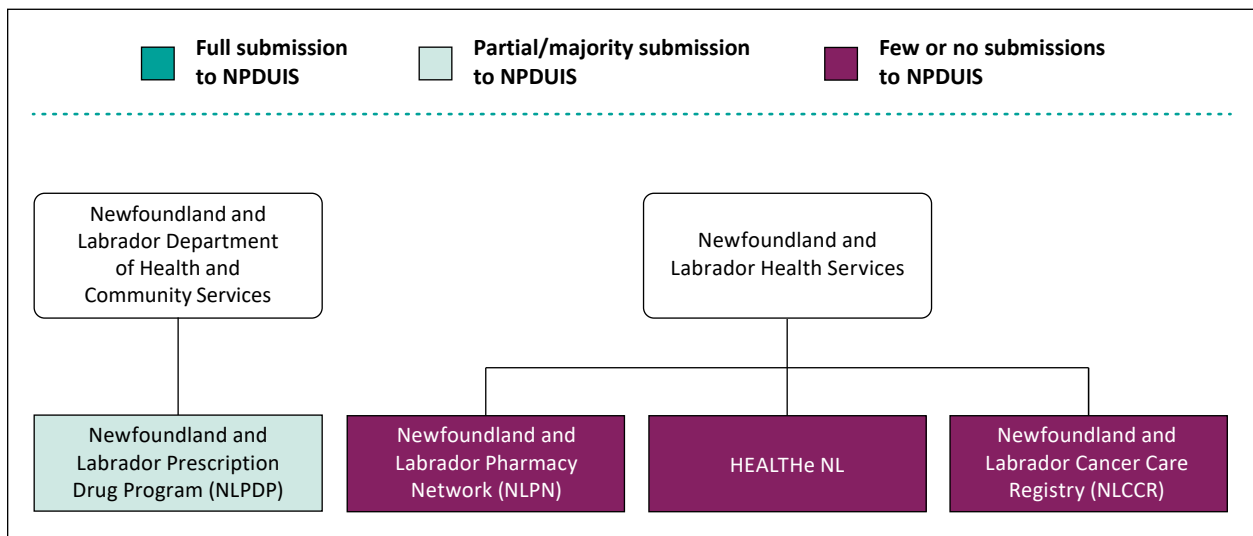
Overview

As of April 1, 2023, all RHAs and the Newfoundland and Labrador Centre for Health Information (NLCHI) transitioned to a single provincial health authority known as NL Health Services (NLHS). Newfoundland and Labrador has a province-wide shared services eHealth model for its health care system. The eHealth model is led by the NLCHI, which is now integrated into NLHS.¹⁴ With this model, NLHS's mandate is to assist communities and policy-makers in making informed health system decisions by providing a full province-wide information system.^{15, 16} Newfoundland and Labrador operates a provincial electronic medical record (EMR) program referred to as eDOCSNL. The eDOCSNL program is in place to improve information-sharing, quality of care and patient safety, and to inform health planning and policy development.¹⁷

The following key prescription drug data assets have been identified for Newfoundland and Labrador: Newfoundland and Labrador Prescription Drug Program (NLPDP), Newfoundland and Labrador Pharmacy Network (NLPN), HEALTHe NL, and Newfoundland and Labrador Cancer Care Registry (NLCCR). Newfoundland and Labrador faces health system challenges related to data standardization, multiple data collection systems and administrative processes.

In terms of CIHI data, Newfoundland and Labrador submits prescription drug data for most publicly funded programs under the NLPDP. The province has other publicly funded programs that fall outside NLPDP’s mandate (e.g., Cancer Clinic Medications) that may not submit data. Newfoundland and Labrador continues to use NPDUIS data to inform health care policy development and decision-making in order to support health care planning that will lead to improved quality of care and health outcomes.

Figure 3 Overview of current and potential NPDUIS data sources, Newfoundland and Labrador



Summary of findings: Current and potential NPDUIS data sources, Newfoundland and Labrador

NLPDP is a current data source that submits data to NPDUIS. Table 4 presents an overview of potential data sources in Newfoundland and Labrador, showing the data available in the 5 data categories within the scope of this report.

Table 4 Data systems applicable to the All Drugs, All People data system, Newfoundland and Labrador

Data holder	Data system	Data coverage	Data categories					Data is available in NPDUIS
			Public	Private	DRD	Cancer	Hospital	
Department of Health and Community Services	Newfoundland and Labrador Prescription Drug Program (NLPDP)	Records of eligible prescription drugs covered under public programs	Y	N	Y	Y	N	Y
Newfoundland and Labrador Health Services	Newfoundland and Labrador Pharmacy Network (NLPN)	Province-wide drug information system for prescription drugs dispensed through community pharmacies	Y	Y	Y	Y	N	FDO
	HEALThe NL	Provincial electronic health record system that consolidates several other health information systems across the province	Y	Y	Y	Y	Y	FDO
	Newfoundland and Labrador Cancer Care Registry (NLCCR)	Population-based registry containing health information on cancer screening and treatment	N	N	Y	Y	Y	FDO

Notes

For the purpose of this report, the prescription drug data categories are defined as follows:

- Public: Data on drugs that are dispensed through community pharmacies for populations eligible under public drug programs.
- Private: Data on drugs that are financed privately (either through private insurance or out of pocket) and dispensed through community pharmacies.
- DRD: Data on drugs for rare diseases that is held by public drug programs, private drug plans, hospitals or health care facilities.
- Cancer: Data on cancer drugs that is held by cancer agencies, public drug programs or private drug plans.
- Hospital: Data on drugs that are administered in hospitals and health care facilities.

Y: Yes; this type of data is captured in the data system.

N: No; this type of data is not captured in the data system.

FDO: Future data opportunity; there is an opportunity for this type of data to be captured in NPDUIS in the future.

Public: NPDUIS holds NLPDP data that is linkable to most data holdings across CIHI; the earliest date available for this data is April 2008. Most current public programs have at least one record in NPDUIS through monthly submissions. NPDUIS does not hold data from the Newfoundland and Labrador Insulin Pump Program (NLIPP); however, data for NLPDP beneficiaries with type 1 diabetes mellitus (T1DM) would be submitted to NPDUIS through NLPDP data. NLIPP, a provincial program administered by NL Health Services, covers the cost of basic insulin pumps and supplies for eligible patients with T1DM. In 2021, the program was expanded to offer full coverage to children and youth up to age 18.¹⁸ Moreover, insulin pump and supply data for Newfoundland and Labrador residents with private insurance is not currently submitted to NPDUIS. The following list identifies the pharmacare plans in NPDUIS along with the plan that could be acquired in future.

Available in NPDUIS

- 65Plus Plan
- Access Plan
- Assurance Plan
- Foundation Plan
- Pandemic Plan
- Select Needs/Cystic Fibrosis Plan
- Select Needs/Growth Hormone Plan
- Ostomy Subsidy Program

Not available in NPDUIS

- NL Insulin Pump Program (NLIPP)

Private: The Newfoundland and Labrador Pharmacy Network (NLPN) is a provincial drug information system held by Newfoundland and Labrador Health Services. The NLPN system holds public and private prescription drug records from community pharmacies and all outpatient hospital pharmacies. NLPN is the data source for the Newfoundland and Labrador Prescription Monitoring Program (PMP-NL), a program of the Department of Health and Community Services, which is administered by NLHS.¹⁹ NLPN data, as well as data for prescription drugs dispensed through community pharmacies and paid for through private drug plans or out of pocket, is not currently submitted to NPDUIS.

Drugs for rare diseases: Medications for rare diseases that are reviewed and recommended for coverage by the Common Drug Review (CDR) and added to the NLPDP are assessed through the Special Authorization process. Requests for medications covered through Special Authorization for an off-label indication or an indication that is not considered under Special Authorization may be considered through the Exceptional Review Process.²⁰ NPDUIIS contains data for a small number of DRDs through public program submissions.

Cancer drugs: Data related to intravenous cancer drugs administered in hospitals and outpatient facilities is stored in hospital information systems. Some data on oral cancer drugs and supportive care drugs is held in public drug plan systems. This data is submitted to NPDUIIS through public program submissions.

The Newfoundland and Labrador Cancer Care Registry (NLCCR) consists of 5 separate programs: Breast Screening, Colon Screening, Cervical Screening, Tumour Surveillance and Systemic Therapy Surveillance (also known as chemotherapy surveillance).²¹ Chemotherapy and disease tracking programs may collect information related to an individual's chemotherapy treatment (e.g., type, dose and cost of drugs received) and the disease (e.g., type of cancer, stage at diagnosis).²¹

Hospital drugs: Drugs administered in hospitals are managed by Newfoundland and Labrador Health Services. This data is collected and stored in the MEDITECH health information system used by most hospitals and outpatient facilities in Newfoundland and Labrador. NPDUIIS does not currently receive data for drugs administered in hospitals.

Prince Edward Island

Overview

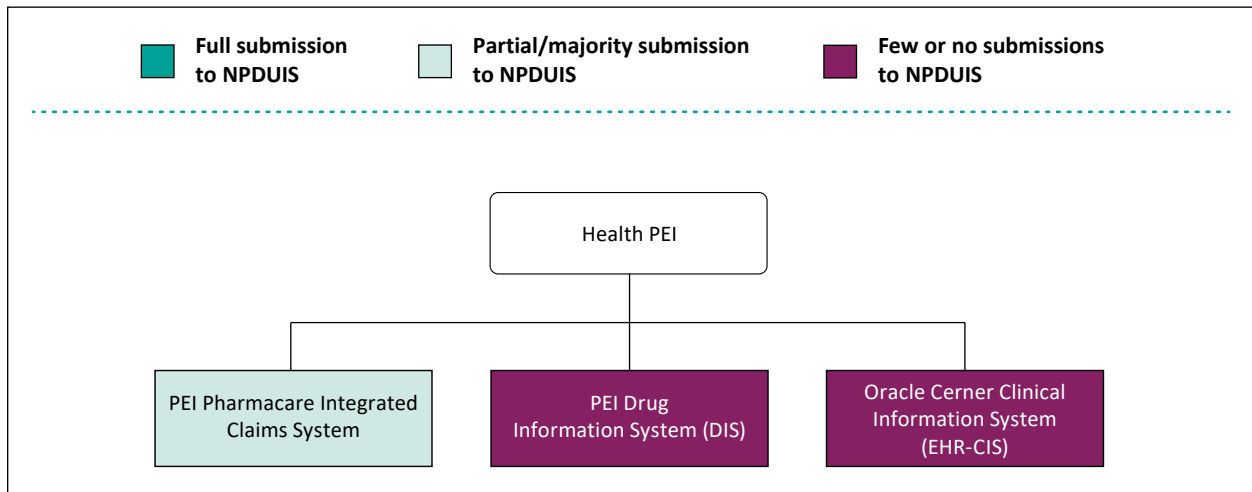
In Prince Edward Island, Health PEI oversees the delivery and operation of publicly funded health care services, including hospitals, health centres, public long-term care nursing facilities, and community-based programs and services. To sustain delivery of health services and support Health PEI's goal of a One Island Health System, the province is working toward implementing a primary care EMR-Telus in the community, which captures prescribing, and is moving toward an integrated EHR for the province. It is not a fully integrated system, as non-acute areas are not linked to the EMR. Moreover, in March 2022, P.E.I. signed an agreement with Health Canada to receive \$35 million in federal funding over 4 years to provide coverage for new drugs and to lower P.E.I. residents' out-of-pocket costs for drugs covered under existing public plans.²² The agreement notes that P.E.I. will continue to participate in federal/provincial/territorial discussions that include the development of a national strategy for rare diseases.

The following key prescription drug data assets have been identified for P.E.I.: PEI Pharmacare Integrated Claims System; PEI Drug Information System (DIS); and Oracle Cerner Clinical Information System (EHR-CIS) (see Figure 4).

In terms of CIHI data, P.E.I. submits the majority of data from the Integrated Claims System to NPDUIS. The province confirms that some Pharmacare programs not in NPDUIS are delivered through provincial pharmacies, and that it is currently looking into transitioning these programs to community pharmacies. Once this transition is complete, the remaining Pharmacare programs will be captured in the Integrated Claims System and will flow to NPDUIS. This supports CIHI’s Pharmaceuticals Data and Information Roadmap and creates an opportunity for NPDUIS to fill gaps in publicly funded drug data.

The ministry uses NPDUIS data to evaluate current drug programs in P.E.I., monitor drug utilization trends across jurisdictions and perform comparative analysis on DRD and cancer drug utilization. During CIHI’s engagement with the province, P.E.I. mentioned the challenges of DIS data quality and cost data unavailability, as well as the need for DRD data to understand and anticipate spending needs.

Figure 4 Overview of current and potential NPDUIS data sources, Prince Edward Island



Summary of findings: Current and potential NPDUIS data sources, Prince Edward Island

The Integrated Claims System is a current data source that submits data to NPDUIS. Table 5 presents an overview of potential data sources in P.E.I., showing the data available in the 5 data categories within the scope of this report.

Table 5 Data systems applicable to the All Drugs, All People data system, Prince Edward Island

Data holder	Data system	Data coverage	Data categories					Data is available in NPDUIS
			Public	Private	DRD	Cancer	Hospital	
Health PEI	PEI Pharmacare Integrated Claims System	Records of prescription drugs, dispensing fees, designated medical devices and supplies covered under public programs.	Y	N	Y	Y	N	Y
	PEI Drug Information System (DIS)	Province-wide system for prescription drugs and medical supplies dispensed through most community pharmacies in P.E.I.	Y	Y	Y	Y	N	FDO
	Oracle Cerner Clinical Information System (EHR-CIS)	Database of information on drugs administered in hospitals and IV cancer drugs.	N	N	Y	Y	Y	FDO

Notes

For the purpose of this report, the prescription drug data categories are defined as follows:

- Public: Data on drugs that are dispensed through community pharmacies for populations eligible under public drug programs.
- Private: Data on drugs that are financed privately (either through private insurance or out of pocket) and dispensed through community pharmacies.
- DRD: Data on drugs for rare diseases that is held by public drug programs, private drug plans, hospitals or health care facilities.
- Cancer: Data on cancer drugs that is held by cancer agencies, public drug programs or private drug plans.
- Hospital: Data on drugs that are administered in hospitals and health care facilities.

Y: Yes; this type of data is captured in the data system.

N: No; this type of data is not captured in the data system.

FDO: Future data opportunity; there is an opportunity for NPDUIS to capture this type of data in the future.

Public: NPDUIS captures the majority of P.E.I.'s Pharmacare records through monthly submissions (since April 2004) and these are linkable to most data holdings across CIHI. P.E.I. submits limited data for publicly funded vaccinations. PEI Pharmacare data is collected by different systems, as drugs covered by the Pharmacare programs are dispensed through provincial and retail pharmacies, as well as administered in hospital. Data from the programs that are delivered at the hospital or provincial pharmacies is currently not submitted to NPDUIS. The following list identifies the pharmacare plans in NPDUIS along with the plans that could be acquired in the future.

Available in NPDUIS

- Catastrophic Drug Program
- Children in Care Drug Program
- Diabetes Drug Program
- Family Health Benefit Drug Program
- Financial Assistance Program
- Generic Drug Program
- High-Cost Drug Program
- Immunization Program
- Nursing Home Drug Program
- Seniors' Drug Program
- Sexually Transmitted Diseases (STD) Program
- Smoking Cessation Program
- Substance Use Harm Reduction Drug Program

Not available in NPDUIS

- AIDS/HIV Program
- Community Mental Health Program
- Cystic Fibrosis Program
- Erythropoietin Program
- Growth Hormone Drug Program
- Hepatitis Program
- Home Oxygen Program
- Institutional Pharmacy Program
- Insulin Pump Program
- Medical Assistance in Dying (MAID)
- Meningitis Program
- Nutrition Services Program
- Ostomy Supplies Program
- Palliative Care Program
- Phenylketonuria Program
- Rabies Program
- Transplant Anti-Rejection Drug Program
- Tuberculosis Drug Program

Private: CIHI does not currently receive data for drugs dispensed in the community that are paid for out of pocket or through private drug plans in P.E.I. The province is moving toward an integrated electronic health record (EHR) across the province and a drug information system (DIS) is one of its components. The PEI DIS contains information relating to medications prescribed and dispensed to Islanders. All community pharmacies in P.E.I. submit prescription drug data to the DIS.

Drugs for rare diseases: NPDUIS contains data on a small number of DRDs through data submitted by public drug programs. Some DRDs administered by provincial pharmacies and covered under the High-Cost Drug Program are currently not submitted to NPDUIS.

Cancer drugs: CIHI currently receives data on oral cancer drugs from P.E.I. Community-based drugs are paid for through public drug programs, private insurance and/or out of pocket, and they are largely dispensed through retail pharmacies that have data systems that are typically not linked to the cancer agencies. Data related to the administration of hospital or cancer centre–based cancer drugs resides within individual cancer centres or hospitals, either through their clinical information system or pharmacy system.

Hospital drugs: CIHI does not currently receive any data for drugs administered in hospital for inpatient or ambulatory care. The Oracle Cerner Clinical Information System (CIS) is the key component of the EHR and may contain all or some information on drugs administered in hospitals. Further study and engagement are required to understand CIS data in terms of drug data and standards.

Nova Scotia

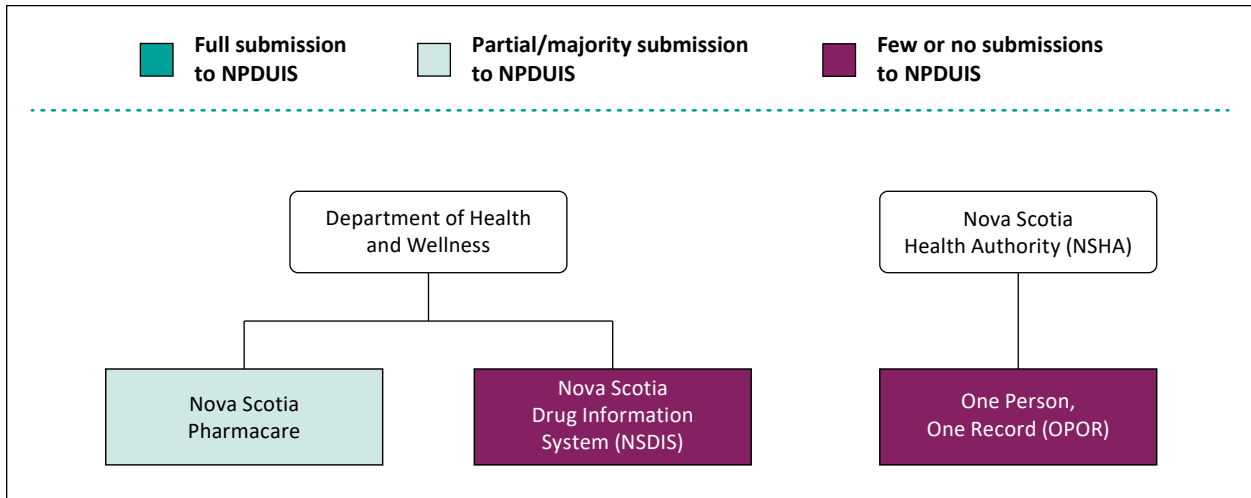
Overview

The provincial eHealth system in Nova Scotia has some integration and supports some sharing of information across health authorities. The eHealth system includes the Secure Health Access Record (SHARE), which holds hospital data; the Electronic Medical Records (EMR) and Integrated Solutions (EIS) Program, which supports the integration of primary care and community-based data systems; the Nova Scotia Drug Information System (NSDIS), which contains prescription drug information from community pharmacies; Picture Archiving Communication System; and Virtual Care.²³

The following key prescription drug data assets have been identified for Nova Scotia: Nova Scotia Pharmacare; Nova Scotia Drug Information System (NSDIS); and One Person, One Record (OPOR) (see Figure 5). Nova Scotia faces health system challenges related to data quality, standardization of point-of-sale systems and administrative processes.

In terms of CIHI data, Nova Scotia submits prescription drug data for some publicly funded programs under Nova Scotia Pharmacare. Nova Scotia continues to use NPDUIS data to revise health care policies, standardize access to care and monitor drug utilization trends across jurisdictions.

Figure 5 Overview of current and potential NPDUIS data sources, Nova Scotia



Summary of findings: Current and potential NPDUIS data sources, Nova Scotia

Pharmacare is a current data source that submits data to NPDUIS. Table 6 presents an overview of potential data sources in Nova Scotia, showing the data available in the 5 data categories within the scope of this report.

Table 6 Data systems applicable to the All Drugs, All People data system, Nova Scotia

Data holder	Data system	Data coverage	Data categories					Data is available in NPDUIS
			Public	Private	DRD	Cancer	Hospital	
Department of Health and Wellness	Nova Scotia Pharmacare	Information system for records of prescription drugs and devices covered under public drug programs.	Y	N	Y	Y	N	Y
	Nova Scotia Drug Information System (NSDIS)	Province-wide drug information system for prescription drugs dispensed through community pharmacies. NSDIS can be accessed through SHARE (the provincial EHR).	Y	Y	Y	Y	N	FDO

Data holder	Data system	Data coverage	Data categories					Data is available in NPDUIS
			Public	Private	DRD	Cancer	Hospital	
Nova Scotia Health Authority (NSHA)	One Person, One Record (OPOR)	Province-wide electronic health record system that aims to consolidate hospital information systems. The province is currently advancing a plan to modernize Nova Scotia's health information systems through the One Person, One Record (OPOR) project.	Y*	Y*	Y*	Y	Y	FDO

Notes

For the purpose of this report, the prescription drug data categories are defined as follows:

- Public: Data on drugs that are dispensed through community pharmacies for populations eligible under public drug programs.
- Private: Data on drugs that are financed privately (either through private insurance or out of pocket) and dispensed through community pharmacies.
- DRD: Data on drugs for rare diseases that is held by public drug programs, private drug plans, hospitals or health care facilities.
- Cancer: Data on cancer drugs that is held by cancer agencies, public drug programs or private drug plans.
- Hospital: Data on drugs that are administered in hospitals and health care facilities.

Y: Yes; this type of data is captured in the data system.

N: No; this type of data is not captured in the data system.

FDO: Future data opportunity; there is an opportunity for NPDUIS to capture this type of data in the future.

* The scope is under review for this type of data.

Public: NPDUIS holds data from some public programs through monthly submissions (since April 2001), and this data is linkable to most data holdings across CIHI. Submitting public programs have at least one record in NPDUIS through monthly submissions. Nova Scotia's public drug program data is collected and stored in several systems in hospitals and provincial pharmacies. Data for provincial programs that is held in hospital and provincial pharmacy systems is not submitted to NPDUIS. The following list identifies the pharmacare plans in NPDUIS along with the plans that could be acquired in the future.

Available in NPDUIS

- Community Services Pharmacare Benefits
- Diabetes Assistance Program
- Drug Assistance for Cancer Patients
- Family Pharmacare Program
- Medical Assistance in Dying: Adjudication of Claims
- Palliative Care Drug Program
- Seniors' Pharmacare Program
- Under 65 — Long-Term Care (LTC) Pharmacare Plan

Not available in NPDUIS

- Exception Drug Fund
- Insulin Pump Program
- Mifegymiso
- Multiple Sclerosis Copayment Assistance
- Special Funding Assistance for Growth Hormone Products
- Special Funding for Eligible Residents With Cystic Fibrosis
- Special Funding for Eligible Residents With Diabetes Insipidus
- Take-Home Cancer Drug Fund

Private: The Nova Scotia Drug Information System (NSDIS) is a province-wide system that holds prescription drug records from community pharmacies. SHARE (Secure Health Access Record) is Nova Scotia's electronic health record (EHR) system through which health care providers can access DIS information. The Nova Scotia Prescription Monitoring Program receives extracts of data from the NSDIS for monitored drug prescriptions/dispenses.²³ Data from NSDIS is not submitted to NPDUIS.

Drugs for rare diseases: Data for certain DRDs is considered for coverage under the Nova Scotia Exception Status Drugs Pharmacare program and is stored outside of community pharmacy systems. Most rare disease, high-cost, transplant and HIV drugs are administered by hospitals, and related data is stored within hospital information systems. Limited DRD data is submitted to community pharmacies through manual submissions and stored in various formats. However, NPDUIS contains data for some DRDs through public program submissions.

Cancer drugs: Drug data related to oral and intravenous cancer treatments covered under the Take-Home Cancer Drug Fund is available through the Nova Scotia Health Authority (NSHA)'s Cancer Care Program. The NSHA also holds provincial cancer registry data. Data from the NSHA's Cancer Care Program and the provincial cancer registry is not submitted to NPDUIS. However, NPDUIS holds records of some oral cancer drugs, supportive care drugs and cancer-related devices submitted through the provincial Drug Assistance for Cancer Patients Program.

Hospital drugs: Nova Scotia operates 3 main hospital information systems that hold data related to drugs administered in hospitals: 1 system for 8 district health authorities, 1 system for the IWK Health Centre and 1 system for Capital District Health Authority.²⁴ On April 1, 2015, the 9 district health authorities were consolidated into the Nova Scotia Health Authority (NSHA). Between these 3 systems, data is stored in several different formats; future implementation of a province-wide electronic health information system — One Person, One Record (OPOR) — will aim to consolidate the current data systems.²⁵ Data from these systems is not currently submitted to NPDUIS.

New Brunswick

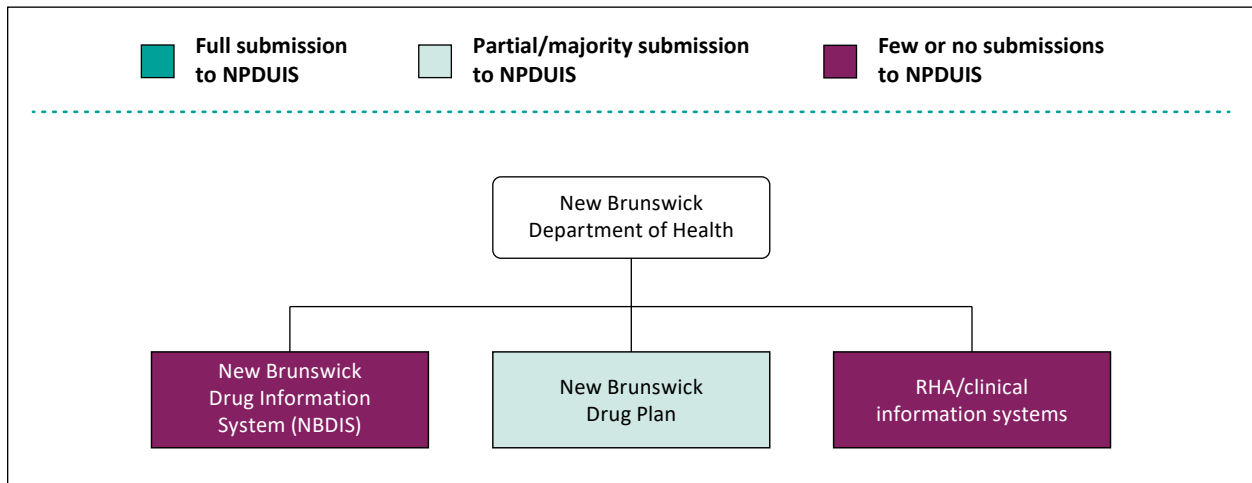
Overview

The New Brunswick Health Plan includes initiatives to create a connected system that provides better access to health information and services. New Brunswick's expanding EMR program, drug information system, hospital information systems, community pharmacy systems and clinical data repository are well integrated with the provincial EHR.²⁶

The following key prescription drug data assets have been identified for New Brunswick: New Brunswick Drug Plan; New Brunswick Drug Information System (NBDIS); and RHA/clinical information systems (see Figure 6). New Brunswick faces health system challenges related to technical infrastructure, data quality and standardization, legacy paper-based systems, manual data processes and staffing shortages.

In terms of CIHI data, New Brunswick submits prescription drug data for most publicly funded programs under the New Brunswick Drug Plan. New Brunswick continues to use NPDUIS data to revise health care policies, monitor drug utilization trends across jurisdictions, and increase consistency in drug coverage for certain populations.

Figure 6 Overview of current and potential NPDUIS data sources, New Brunswick



Summary of findings: Current and potential NPDUIS data sources, New Brunswick

The New Brunswick Drug Plan is a current data source for NPDUIS. Table 7 presents an overview of potential data sources in New Brunswick, showing the data available in the 5 data categories within the scope of this report.

Table 7 Data systems applicable to the All Drugs, All People data system, New Brunswick

Data holder	Data system	Data coverage	Data categories					Data is available in NPDUIS
			Public	Private	DRD	Cancer	Hospital	
Department of Health	New Brunswick Drug Plan	Records of drug claims paid under public drug plans.	Y	N	Y	Y	N	Y
	New Brunswick Drug Information System (NBDIS)	Real-time drug information system for prescription drugs dispensed through community pharmacies. NBDIS does not capture hospital data.	Y	Y	Y	Y	N	FDO
	Various clinical information systems	Data related to intravenous cancer drugs administered in hospitals and outpatient facilities is stored in the regional health authority (RHA) systems. Drugs administered in hospitals are managed by the 2 RHAs; data is collected at the hospital level and is stored in several different information systems.	N	N	Y	Y	Y	FDO

Notes

For the purpose of this report, the prescription drug data categories are defined as follows:

- Public: Data on drugs that are dispensed through community pharmacies for populations eligible under public drug programs.
- Private: Data on drugs that are financed privately (either through private insurance or out of pocket) and dispensed through community pharmacies.
- DRD: Data on drugs for rare diseases that is held by public drug programs, private drug plans, hospitals or health care facilities.
- Cancer: Data on cancer drugs that is held by cancer agencies, public drug programs or private drug plans.
- Hospital: Data on drugs that are administered in hospitals and health care facilities.

Y: Yes; this type of data is captured in the data system.

N: No; this type of data is not captured in the data system.

FDO: Future data opportunity; there is an opportunity for NPDUIS to capture this type of data in the future.

Public: NPDUIS holds data from most public drug programs through monthly submissions (since January 2000), and this data is linkable to most data holdings across CIHI. NPDUIS does not hold data from the Correctional Services Program or the New Brunswick Drugs for Rare Diseases (NB DRD) Plan. The following list identifies the drug plans in NPDUIS along with the plans that could be acquired in the future.

Available in NPDUIS

New Brunswick Prescription Drug Program (NBPDP):

- Adults in Residential Facilities
- Children in Care of the Minister of Social Development and Special Needs Children
- Nursing Home Residents
- Seniors
- Social Development Clients
- Cystic Fibrosis Plan
- Extra-Mural Program
- Growth Hormone Deficiency Plan
- HIV/AIDS Plan
- Medavie Blue Cross Seniors' Prescription Drug Program
- Medical Abortion Program
- Multiple Sclerosis Plan
- New Brunswick Drug Plan
- New Brunswick Tuberculosis Drug Plan
- Organ Transplant Plan
- Public Health Plan

Not available in NPDUIS

- Correctional Services Program
- New Brunswick Drugs for Rare Diseases (NB DRD) Plan

Private: Data on all prescription drugs dispensed through community pharmacies is submitted to NBDIS, regardless of how the prescription is paid for or reimbursed (e.g., publicly funded drug programs, private insurance, out of pocket). Data on drugs administered in hospitals and outpatient facilities is not captured in NBDIS. Notably, cost and payer information are not captured in NBDIS. NBDIS data is not submitted to NPDUIS.

Drugs for rare diseases: The New Brunswick Drugs for Rare Diseases (NB DRD) Plan provides coverage for 6 DRDs for eligible patients who meet clinical criteria. Claims are processed manually and are not submitted to NPDUIS. No additional drugs will be added to the NB DRD Plan going forward; instead, additional drugs will be covered through other existing public drug plans.²⁷ Data for DRDs eligible for coverage under the New Brunswick Drug Plan, excluding the NB DRD Plan, is submitted to NPDUIS. NPDUIS also contains data for some DRDs through public program submissions.

Cancer drugs: Data related to intravenous cancer drugs administered in hospitals and outpatient facilities is stored in the RHA systems. This drug data is not submitted to NPDUIS. Data for some oral cancer drugs and supportive care drugs is held in public drug plan systems.²⁸ NPDUIS holds records of cancer drugs and supportive care drugs submitted through the New Brunswick Drug Plan.

Hospital drugs: Drugs administered in hospitals are managed by the 2 RHAs. Data is collected at the hospital level and is stored in several different information systems. NPDUIS does not currently receive data for drugs administered in New Brunswick hospitals.

Quebec

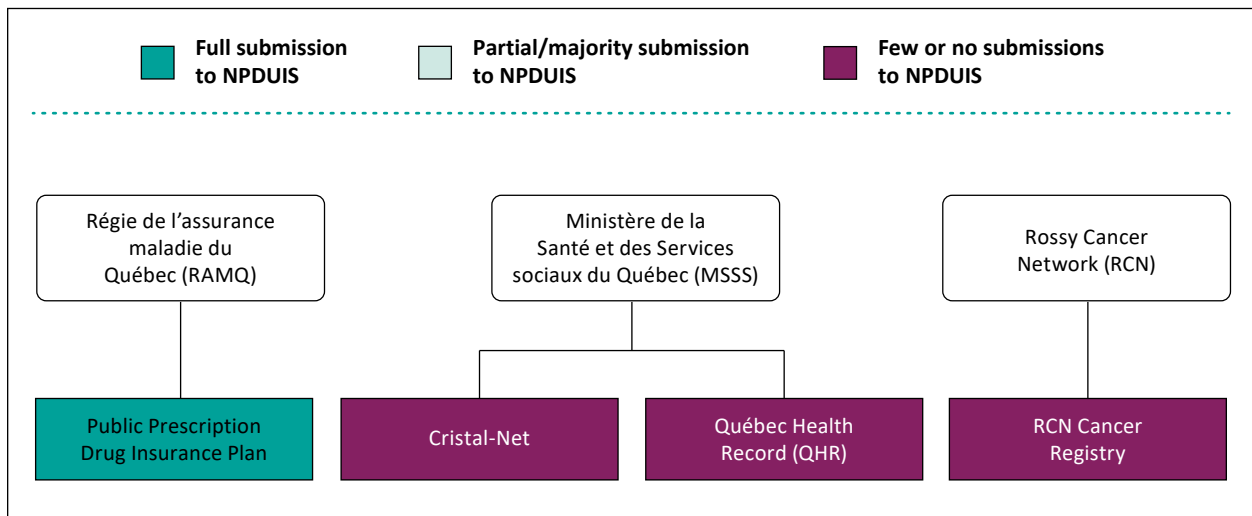
Overview

The ministère de la Santé et des Services sociaux du Québec (MSSS) is responsible for all aspects of the health system, including acute care, mental health, public health, long-term care and home care services. In March 2022, the MSSS released a 3-year health plan to address improvement and modernization of Quebec's health system.

The following key prescription drug data assets have been identified for Quebec: Régie de l'assurance maladie du Québec (RAMQ), Québec Health Record (QHR), Cristal-Net, and Rossy Cancer Network (RCN) Cancer Registry (see Figure 7).

In terms of NPDUIS data, RAMQ submits data to CIHI, and CIHI can use it for specific purposes only.

Figure 7 Overview of current and potential NPDUIS data sources, Quebec



Summary of findings: Current and potential NPDUIS data sources, Quebec

RAMQ is a current data source that submits data to NPDUIS. Table 8 presents an overview of potential data sources in Quebec, showing the data available in the 5 data categories within the scope of this report.

Table 8 Data systems applicable to the All Drugs, All People data system, Quebec

Data holder	Data system	Data coverage	Data categories					Data is available in NPDUIS
			Public	Private	DRD	Cancer	Hospital	
Régie de l'assurance maladie du Québec (RAMQ)	RAMQ (Public Prescription Drug Insurance Plan)	Holds data on public health and drug insurance plans in Quebec.	Y	N	Y	Y	N	Y
Ministère de la Santé et des Services sociaux du Québec (MSSS)	Québec Health Record (QHR)	Contains data on prescribed medications that are dispensed through community pharmacies, and medications administered in outpatient oncology clinics.	Y	Y	Y	Y	Y	FDO
	Cristal-Net	Electronic medical record that contains hospital data.	N	N	Y	Y	Y	FDO
Rossy Cancer Network (RCN)	Rossy Cancer Network (RCN) Cancer Registry	Holds cancer data for 3 hospitals: St. Mary's Hospital, the Jewish General Hospital and the McGill University Health Centre.	N	N	Y	Y	Y	FDO

Notes

For the purpose of this report, the prescription drug data categories are defined as follows:

- Public: Data on drugs that are dispensed through community pharmacies for populations eligible under public drug programs.
- Private: Data on drugs that are financed privately (either through private insurance or out of pocket) and dispensed through community pharmacies.
- DRD: Data on drugs for rare diseases that is held by public drug programs, private drug plans, hospitals or health care facilities.
- Cancer: Data on cancer drugs that is held by cancer agencies, public drug programs or private drug plans.
- Hospital: Data on drugs that are administered in hospitals and health care facilities.

Y: Yes; this type of data is captured in the data system.

N: No; this type of data is not captured in the data system.

FDO: Future data opportunity; there is an opportunity for NPDUIS to capture this type of data in the future.

Public: The Régie de l'assurance maladie du Québec (RAMQ) administers Quebec's public drug plan and holds the data. In Quebec, everyone must have prescription drug coverage, either through the public drug plan or a private drug plan. People who do not have private health insurance are covered by the public drug plan. RAMQ submits data from the Public Prescription Drug Insurance Plan to CIHI; the earliest date available for this data is January 2014. All current public programs have at least one record in NPDUIS through monthly submissions. Due to CIHI's agreement with Quebec, RAMQ data is used for specific purposes only.

Available in NPDUIS

- Public Prescription Drug Insurance Plan

Not available in NPDUIS

- Not applicable

Private: The Québec Health Record (QHR) contains information on prescription medications from all community pharmacies in Quebec; however, CIHI does not currently receive data for drugs dispensed in the community that are paid through private drug plans in Quebec.

Drugs for rare diseases: NPDUIS receives data for some DRDs through public drug program data submissions. For the remaining DRDs, the accessibility and granularity of the data was not determined during this review.

Cancer drugs: Quebec is similar to other jurisdictions in that cancer drugs are covered through a mix of provincial drug programs, private drug plans and hospitals. The Rossy Cancer Network holds cancer data for 3 hospitals: St. Mary's Hospital, the Jewish General Hospital and the McGill University Health Centre. NPDUIS currently does not capture any data on cancer drugs administered in hospitals, but it receives data on oral cancer drugs through public drug program submissions by RAMQ.

Hospital drugs: Cristal-Net is a clinical information system, and it is currently being implemented across the province by the Centre hospitalier universitaire (CHU) de Québec-Université Laval. The modules in Cristal-Net are lab, pharmacy, oncology, Kardex and integration with the Québec Health Record (QHR).⁵⁰ The system also can link with radiology data. CIHI does not currently receive any data for drugs administered in hospitals.

Ontario

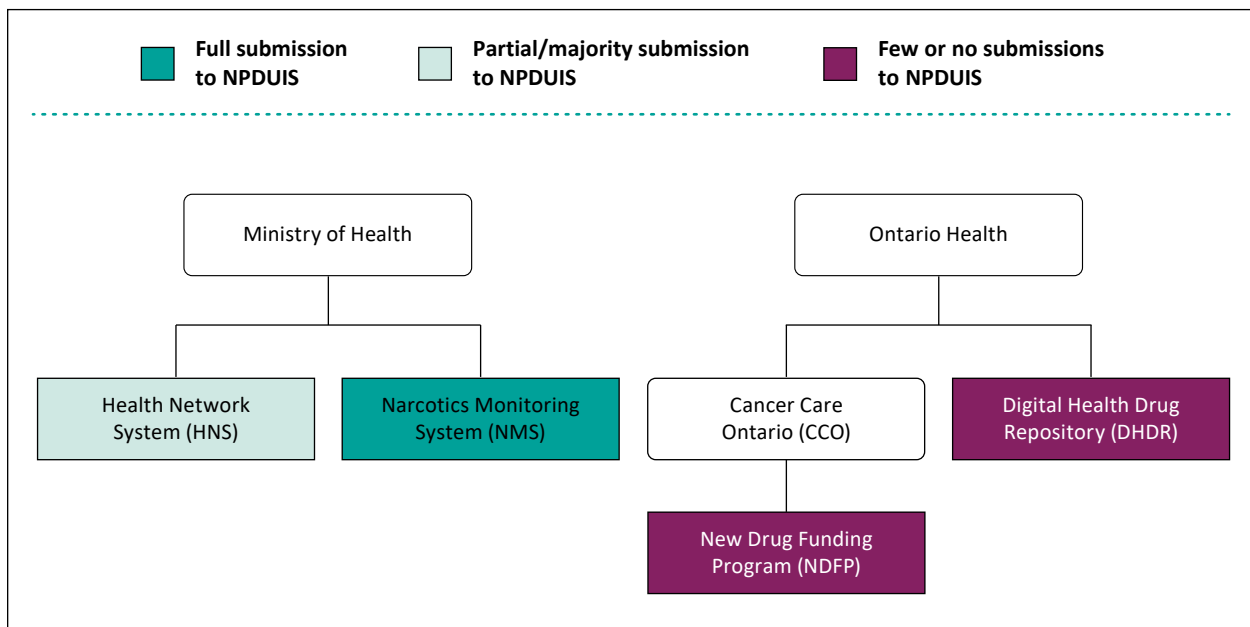
Overview

In 2019, Ontario began a major restructuring of its health care system to implement a connected public health care system for Ontarians. Ontario Health was formed to consolidate multiple health agencies and organizations, including Cancer Care Ontario (CCO), local health integration networks (LHINs) and more.²⁹ Ontario's Ministry of Health (MOH) provides prescription drug coverage through drug programs to eligible populations. Currently, Ontario is working on the Ontario Comprehensive Medication Record for Ontarians initiative. Through this initiative, data for all dispensed drugs from community pharmacies, regardless of how they are paid for or reimbursed, and drugs administered in hospitals will flow into the Digital Health Drug Repository (DHDR). This initiative is in the early stages of implementation.

The following key drug data assets have been identified for Ontario: Health Network System (HNS), Narcotics Monitoring System (NMS), Digital Health Drug Repository (DHDR) and New Drug Funding Program (NDFP) (see Figure 8).

In terms of CIHI data, the MOH currently submits Ontario Drug Benefit data through the HNS and monitored drug data through the NMS. Ontario continues to use NPDUIS data to inform drug funding decisions and monitor drug utilization trends across jurisdictions.

Figure 8 Overview of current and potential NPDUIS data sources, Ontario



Summary of findings: Current and potential NPDUIS data sources, Ontario

The HNS and the NMS are current data sources for NPDUIS. Table 9 presents an overview of potential data sources in Ontario, showing the data available in the 5 data categories within the scope of this report.

Table 9 Data systems applicable to the All Drugs, All People data system, Ontario

Data holder	Data system	Data coverage	Data categories					Data is available in NPDUIS
			Public	Private	DRD	Cancer	Hospital	
Ministry of Health	Health Network System (HNS)	Contains information on publicly funded prescription drugs and medical supplies.	Y	N	Y	Y	N	Y
	Narcotics Monitoring System (NMS)	Collects and stores information on prescribing and dispensing activities relating to prescription narcotics and other controlled substance medications in Ontario.	Y	Y	N	N	N	Y
Ontario Health	Digital Health Drug Repository (DHDR)	Contains information on publicly funded drugs and pharmacy services as well as all monitored drugs regardless of payer. Starting in 2024, the DHDR expansion will begin as a pilot with selected adopters from the hospital and community pharmacy sectors and will expand to include the entirety of these sectors over time.	Y	Y	Y	Y	Y	FDO

Data holder	Data system	Data coverage	Data categories					Data is available in NPDUIS
			Public	Private	DRD	Cancer	Hospital	
Cancer Care Ontario	New Drug Funding Program (NDFP)	Contains administrative, clinical and demographic data on cancer drugs administered in hospitals and cancer centres. The data includes a list of drugs; frequency of administration, by drug name; and patient and treatment information.	N	N	Y	Y	Y	FDO

Notes

For the purpose of this report, the prescription drug data categories are defined as follows:

- Public: Data on drugs that are dispensed through community pharmacies for populations eligible under public drug programs.
- Private: Data on drugs that are financed privately (either through private insurance or out of pocket) and dispensed through community pharmacies.
- DRD: Data on drugs for rare diseases that is held by public drug programs, private drug plans, hospitals or health care facilities.
- Cancer: Data on cancer drugs that is held by cancer agencies, public drug programs or private drug plans.
- Hospital: Data on drugs that are administered in hospitals and health care facilities.

Y: Yes; this type of data is captured in the data system.

N: No; this type of data is not captured in the data system.

FDO: Future data opportunity; there is an opportunity for NPDUIS to capture this type of data in the future.

Public: The ODB program submits data to NPDUIS; the earliest date available for this data is April 2010. This data is linkable to most data holdings across CIHI. All submitting public programs have at least one record in NPDUIS through monthly submissions. Ontario also submits limited data for publicly funded vaccinations. However, drugs covered under certain programs, such as the Respiratory Syncytial Virus Prophylaxis for High-Risk Infants Program, the Inherited Metabolic Diseases Program and the Special Drugs Program, are distributed and administered through special facilities in hospitals, and data on these drugs is stored in various systems. As a result, this data is not easily available and thus not submitted to NPDUIS.

Available in NPDUIS

- OHIP+
- Ontario Drug Benefit program
- Trillium Drug Program
- Visudyne Program

Not available in NPDUIS

- Inherited Metabolic Diseases Program
- Respiratory Syncytial Virus Prophylaxis for High-Risk Infants Program
- Special Drugs Program

Private: The Digital Health Drug Repository (DHDR) is an electronic repository of drug and pharmacy service information — a key element of Ontario’s EHR. The DHDR currently encompasses publicly funded drugs and pharmacy services, and all monitored drugs, regardless of payer. It is now being expanded to incorporate information on drugs administered in hospitals, drugs that are paid for through private drug plans and dispensed in the community, and pharmacy services for all individuals in Ontario, including those without an Ontario health card number. This information will flow directly from new data sources (hospital and community pharmacies) starting in 2024.³⁰

The Narcotics Monitoring System (NMS) submits dispensing data on all monitored drugs from community pharmacies, regardless of how the prescription is paid for or reimbursed (e.g., publicly funded drug programs, private insurance, out of pocket). Beyond NMS data, Ontario does not submit any data for drugs paid through private insurance and out of pocket.

Drugs for rare diseases: In Ontario, the Exceptional Access Program (EAP) provides access to drugs that are not listed on the Ontario Drug Benefit (ODB) formulary or that require specific criteria to be met. The EAP covers drugs for some rare diseases such as cryopyrin-associated periodic syndrome.³¹ Most EAP claims are recorded in the HNS and are included in the ODB data that Ontario submits to NPDUIS. Special Drugs Program claims are manual EAP claims and may not be included in the ODB data set.

Cancer drugs: Data on cancer drugs is scattered across the jurisdiction and resides with the Ministry of Health (MOH), Cancer Care Ontario (CCO) and hospitals/cancer centres. Data on oral cancer drugs that are dispensed through outpatient cancer or community pharmacies for take-home use and covered through the MOH's ODB program and the EAP is submitted to NPDUIS. However, information on intravenous cancer drugs covered through the New Drug Funding Program (NDFP) at CCO is not available in NPDUIS.

Hospital drugs: Clinical data collected in the General Medicine Inpatient Initiative (GEMINI) database from participating hospitals includes pharmacy information such as medication orders for inpatients. NPDUIS does not currently receive data for drugs administered in hospitals.

Manitoba

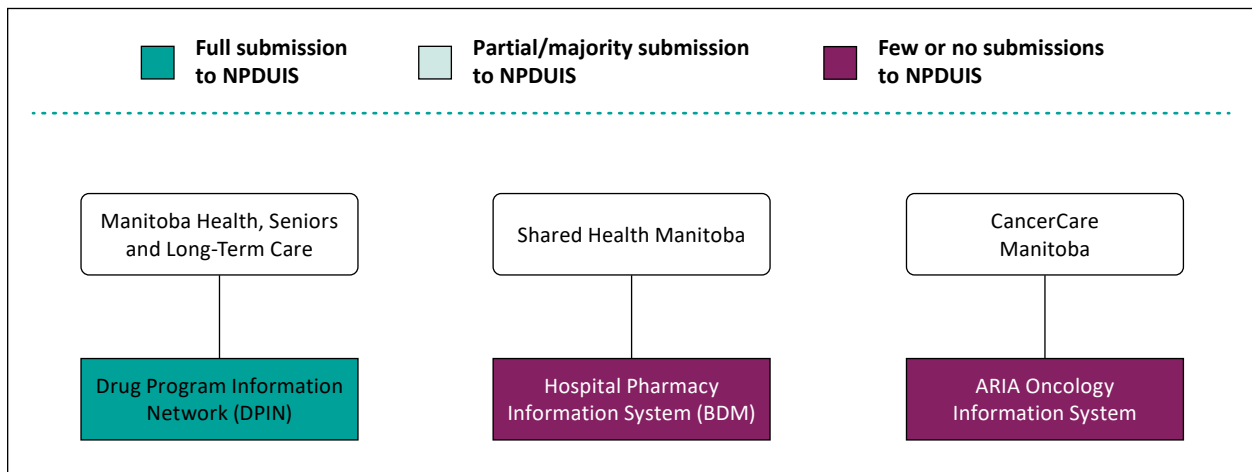
Overview

The health system in Manitoba is largely complex. Manitoba Health, Seniors and Long-Term Care (MHSLC) has established the Manitoba Health System Transformation Program to implement system-wide changes to improve the delivery of health care across the province. MHSLC and CancerCare Manitoba are the custodians of administrative data and information in Manitoba.³²

The following key prescription drug data assets have been identified for Manitoba: Drug Program Information Network (DPIN), ARIA Oncology Information System and Hospital Pharmacy Information System (BDM) (see Figure 9). Manitoba faces health system challenges related to legacy information systems and multiple health authorities.

In terms of CIHI data, Manitoba is 1 of 3 jurisdictions that submit all community-dispensed prescription drug data to NPDUIS. Manitoba continues to use NPDUIS data to facilitate cost-driver analyses to deliver equitable quality of care to all Manitobans, inform health care decision-making, standardize access to care and monitor drug utilization trends across jurisdictions.

Figure 9 Overview of current and potential NPDUIS data sources, Manitoba



Summary of findings: Current and potential NPDUIS data sources, Manitoba

DPIN is a current data source that submits data to NPDUIS. Table 10 presents an overview of potential data sources in Manitoba, showing the data available in the 5 data categories within the scope of this report.

Table 10 Data systems applicable to the All Drugs, All People data system, Manitoba

Data holder	Data system	Data coverage	Data categories					Data is available in NPDUIS
			Public	Private	DRD	Cancer	Hospital	
Manitoba Health, Seniors and Long-Term Care	Drug Program Information Network (DPIN)	Drug information system for prescription drugs dispensed through community pharmacies. The database does not capture information on services related to hospital pharmacies, nursing stations, ward stock or outpatient visits at CancerCare Manitoba.	Y	Y	Y	Y	N	Y
Shared Health Manitoba	Hospital Pharmacy Information System (BDM)	Electronic information database for prescription drugs administered in hospital.	N	N	Y	Y	Y	FDO
CancerCare Manitoba	ARIA Oncology Information System	Database that holds data from the Provincial Oncology Drug Program.	N	N	Y	Y	Y	FDO

Notes

For the purpose of this report, the prescription drug data categories are defined as follows:

- Public: Data on drugs that are dispensed through community pharmacies for populations eligible under public drug programs.
- Private: Data on drugs that are financed privately (either through private insurance or out of pocket) and dispensed through community pharmacies.
- DRD: Data on drugs for rare diseases that is held by public drug programs, private drug plans, hospitals or health care facilities.
- Cancer: Data on cancer drugs that is held by cancer agencies, public drug programs or private drug plans.
- Hospital: Data on drugs that are administered in hospitals and health care facilities.

Y: Yes; this type of data is captured in the data system.

N: No; this type of data is not captured in the data system.

FDO: Future data opportunity; there is an opportunity for NPDUIS to capture this type of data in the future.

Public: NPDUIS holds data from all public drug programs through monthly submissions (since January 2000), and this data is linkable to most data holdings across CIHI. Data related to the Manitoba Pharmacare Program and other provincial drug programs is maintained by Manitoba Health. The data is managed through the publicly funded program interface in DPIN.³³ The following list identifies the pharmacare plans in NPDUIS along with the plans that could be acquired in the future. Note that the Pediatric Insulin Pump Program covers only supplies, not the medication itself.

Available in NPDUIS

- Employment and Income Assistance Program
- Home Cancer Drug Program
- Palliative Care Drug Access Program
- Pediatric Insulin Pump Program
- Personal Care Home Drug Program
- Pharmacare

Not available in NPDUIS

- Not applicable

Private: The DPIN database is maintained by Manitoba Health, Seniors and Long-Term Care. DPIN is an electronic drug information system that contains records related to prescription drugs dispensed through community pharmacies. NPDUIS holds these data records through monthly submissions from DPIN (since 2015). DPIN does not hold drug records from hospital pharmacies.³³ Private records in NPDUIS contain limited information on costs.

Drugs for rare diseases: Data for DRDs is scattered across multiple systems in Manitoba. Specific drugs are covered as an Exception Drug Status (EDS) benefit for a specified time period and only once a beneficiary's annual Pharmacare deductible has been met.³⁴ Data on some EDS prescription drugs is not submitted to NPDUIS. However, NPDUIS contains data for some DRDs through public and private submissions.

Cancer drugs: ARIA Oncology Information System holds records from the Provincial Oncology Drug Program (PODP) for intravenous cancer drugs administered in hospitals (except the Health Sciences Centre) and outpatient cancer care facilities. The PODP is funded through the MHSLC and administered by CancerCare Manitoba. PODP data is not submitted to NPDUIS. However, NPDUIS contains data on some oral cancer drugs and specific supportive care drugs through public program submissions, including those from the provincial Home Cancer Drug (HCD) Program.

Hospital drugs: Data from the Hospital Pharmacy Information System (BDM) and on drugs administered in hospital (regardless of funding organization) is not currently submitted to NPDUIS.

Saskatchewan

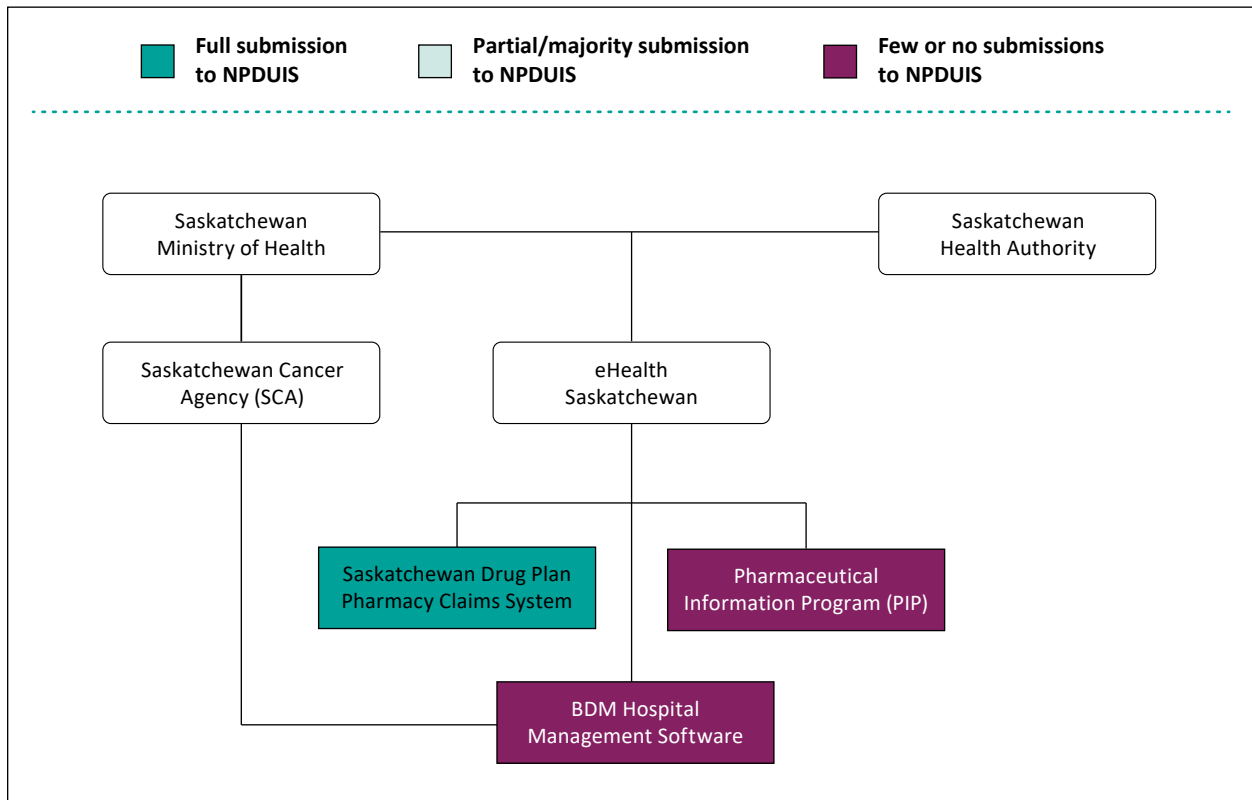
Overview

Saskatchewan's growth plan — 30 Goals for 2030 — includes delivering quality health care to Saskatchewanians by focusing on recruitment and retention of staff and physicians, mental health and substance use services, surgical wait-lists, access to primary health care and technology.³⁵ The Government of Canada and the Government of Saskatchewan signed an agreement in principle in March 2023 that will invest \$5.94 billion in federal funding over 10 years. This will help Saskatchewan provide improved health care services to Saskatchewan residents. The current priorities for Saskatchewan include enhancing drug coverage and optimizing cost savings and health system sustainability by implementing strategies for DRDs, an initiative for biosimilar use, and advanced health analytics to predict expenditures.

The report identifies the following data assets in Saskatchewan: Saskatchewan Drug Plan Pharmacy Claims System, Pharmaceutical Information Program (PIP) and BDM Hospital Management Software (see Figure 10).

In terms of CIHI data, Saskatchewan is 1 of 3 jurisdictions that submit all community-dispensed prescription drug data to NPDUIS; however, some high-cost drug records are stored in a stand-alone database. These high-cost drug records will eventually be submitted to NPDUIS. Saskatchewan continues to use NPDUIS data to revise health policies, develop performance measurement indicators, and analyze use and spending to provide better care for all subpopulations.

Figure 10 Overview of current and potential NPDUIS data sources, Saskatchewan



Summary of findings: Current and potential NPDUIS data sources, Saskatchewan

The Saskatchewan Drug Plan Pharmacy Claims System is a current data source that submits data to NPDUIS. Table 11 presents an overview of potential data sources in Saskatchewan, showing the data available in the 5 data categories within the scope of this report.

Table 11 Data systems applicable to the All Drugs, All People data system, Saskatchewan

Data holder	Data system	Data coverage	Data categories					Data is available in NPDUIS
			Public	Private	DRD	Cancer	Hospital	
Ministry of Health	Saskatchewan Drug Plan Pharmacy Claims System	Contains data on all prescriptions dispensed in the province, regardless of payer, and designated medical supplies.	Y	Y	Y	Y	N	Y
eHealth Saskatchewan	Pharmaceutical Information Program (PIP)	PIP provides information about a person's prescribed medications that are dispensed through Saskatchewan community pharmacies and cancer centre pharmacies. It does not contain information on costs or on drug plans.	Y	Y	Y	Y	N	FDO
	BDM Hospital Management Software	Contains data for drugs dispensed in hospitals in Saskatchewan and through the Saskatchewan Cancer Agency.	N	N	Y	Y	Y	FDO

Notes

For the purpose of this report, the prescription drug data categories are defined as follows:

- Public: Data on drugs that are dispensed through community pharmacies for populations eligible under public drug programs.
- Private: Data on drugs that are financed privately (either through private insurance or out of pocket) and dispensed through community pharmacies.
- DRD: Data on drugs for rare diseases that is held by public drug programs, private drug plans, hospitals or health care facilities.
- Cancer: Data on cancer drugs that is held by cancer agencies, public drug programs or private drug plans.
- Hospital: Data on drugs that are administered in hospitals and health care facilities.

Y: Yes; this type of data is captured in the data system.

N: No; this type of data is not captured in the data system.

FDO: Future data opportunity; there is an opportunity for NPDUIS to capture this type of data in the future.

Public: The Saskatchewan Drug Plan Pharmacy Claims System submits data to NPDUIS; the earliest date available for this data is January 2000. The data is linkable to most data holdings across CIHI. All submitting public programs have at least one record in NPDUIS through quarterly submissions. Medications that may not be captured in the Saskatchewan Drug Plan Pharmacy Claims System include those for sexually transmitted and blood-borne infections, post-exposure prophylaxis treatment to prevent disease following exposure to blood or body fluids, immunoglobulins and medications provided by community paramedics.

Available in NPDUIS

- Children’s Drug Program
- Emergency Assistance for Prescription Drugs
- Family Health Benefits
- Income Supplements
- Palliative Care Program
- Saskatchewan Aids to Independent Living (SAIL)
- Seniors’ Drug Plan
- Special Support Program
- Supplementary Health Benefits

Not available in NPDUIS

- Not applicable

Private: The Pharmaceutical Information Program (PIP) captures information on prescriptions dispensed through Saskatchewan community pharmacies, regardless of payer. It does not contain information on costs or exhaustive information on drug plans, and is generally used as a clinical tool.

The MOH’s Saskatchewan Drug Plan Pharmacy Claims System submits data to NPDUIS monthly (since 2006) on drugs dispensed in the community that are paid for through private drug plans or out of pocket. Private records in NPDUIS contain limited information on costs.

Drugs for rare diseases: Data on DRDs is stored in different systems, such as special support programs and private insurance, and is not easily accessible. Despite this, data for some DRDs is available in NPDUIS through MOH data submissions.

Cancer drugs: Data on oral and injectable cancer drugs covered by the Saskatchewan Cancer Agency (SCA) and dispensed by SCA pharmacies, the Saskatoon Cancer Centre Pharmacy or the Allan Blair Cancer Centre pharmacy has been captured in eHealth's PIP system since August 2022. SCA extracts data from the BDM Hospital Management Software and stores all the data related to cancer medication dispensing in a data warehouse housed by eHealth.. Moreover, limited data on oral cancer drugs dispensed through community pharmacies is transferred to the Saskatchewan Drug Plan Pharmacy Claims System and is available in NPDUIS through MOH data submissions.

Hospital drugs: Since 2015, the BDM Hospital Management Software has stored data from all hospitals in Saskatchewan, including over 50 acute care facilities, long-term care homes and a pediatric hospital. CIHI does not receive data on drugs dispensed in Saskatchewan hospitals.

Alberta

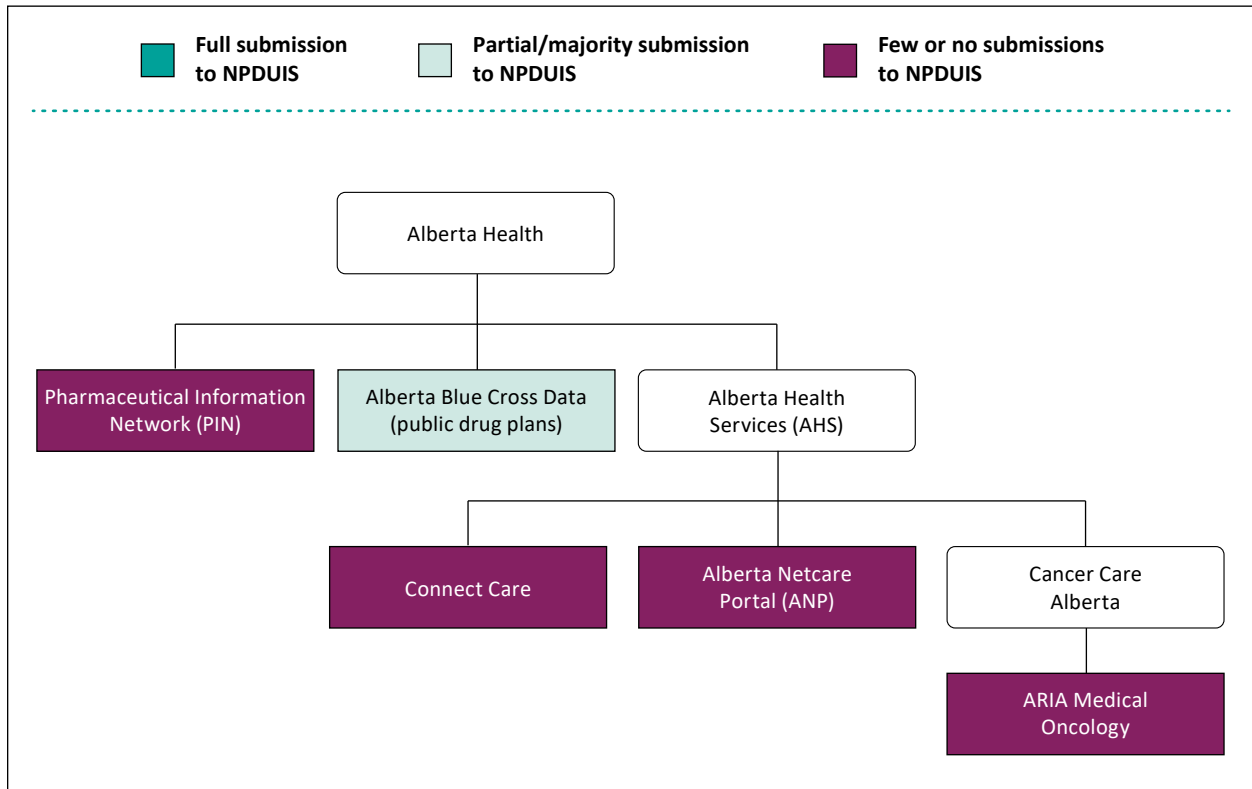
Overview

One of Alberta's health priorities is to achieve a sustainable and accountable health system to promote and protect the health of Albertans. Alberta is working to advance this priority by ensuring that publicly funded drug benefits are available to the most vulnerable, collaborating with other jurisdictions to achieve more affordable prescription drug coverage, and expanding access to mental health and substance use services.^{36, 37}

The following key prescription drug data assets have been identified for Alberta: Pharmaceutical Information Network (PIN), Alberta Blue Cross Claims (public drug plans), Alberta Netcare Portal (ANP), Connect Care and ARIA Medical Oncology (see Figure 11). Over the past 2 decades, Alberta has been transitioning toward an integrated health care system known as Connect Care. Connect Care will contribute to improved data digitalization, data quality and data interoperability, and to efficient data accessibility.³⁸ Alberta Health Services is actively working toward connecting all components of health data, although there are some challenges in terms of data quality and data across various systems.

In terms of CIHI data, Alberta submits prescription drug data for some publicly funded programs. Alberta uses NPDUIS data to analyze information to facilitate price negotiation, to revise health policies to provide better care for all populations, and to gain insight into drug utilization trends across jurisdictions.

Figure 11 Overview of current and potential NPDUIS data sources, Alberta



Summary of findings: Current and potential NPDUIS data sources, Alberta

Alberta’s public drug programs are current data sources that submit data to NPDUIS. Table 12 presents an overview of potential data sources in Alberta, showing the data available in the 5 data categories within the scope of this report.

Table 12 Data systems applicable to the All Drugs, All People data system, Alberta

Data holder	Data system	Data coverage	Data categories					Data is available in NPDUIS
			Public	Private	DRD	Cancer	Hospital	
Alberta Health, Alberta Blue Cross	Alberta Blue Cross Data (public drug plans)	Contains data on publicly funded prescription drugs and designated medical supplies.	Y	N	Y	N	N	Y
Alberta Health	Pharmaceutical Information Network (PIN)	Contains information on all prescription drugs dispensed through most community pharmacies in Alberta.	Y	Y	Y	Y	N	FDO
Alberta Health Services (AHS)	Alberta Netcare Portal (ANP)	Includes information on nearly all laboratory tests, diagnostic images and reports, dispensed medications, immunizations, surgeries, drug alerts, allergies and intolerances, demographics and hospital visits that have been recorded in the province since 2003.	Y	Y	Y	Y	Y	FDO
	Connect Care	Contains information from all acute care hospitals that are under the domain of AHS, and from hospital diagnostic facilities, hospital labs, hospital pharmacies and other AHS clinics and facilities.	N	N	Y	Y	Y	FDO

Data holder	Data system	Data coverage	Data categories					Data is available in NPDUIS
			Public	Private	DRD	Cancer	Hospital	
Cancer Care Alberta	ARIA Medical Oncology	Holds data on all radiation, medical and surgical oncology information. It also includes pharmacy drug dispensing information.	N	N	Y	Y	Y	FDO

Notes

For the purpose of this report, the prescription drug data categories are defined as follows:

- Public: Data on drugs that are dispensed through community pharmacies for populations eligible under public drug programs.
- Private: Data on drugs that are financed privately (either through private insurance or out of pocket) and dispensed through community pharmacies.
- DRD: Data on drugs for rare diseases that is held by public drug programs, private drug plans, hospitals or health care facilities.
- Cancer: Data on cancer drugs that is held by cancer agencies, public drug programs or private drug plans.
- Hospital: Data on drugs that are administered in hospitals and health care facilities.

Y: Yes; this type of data is captured in the data system.

N: No; this type of data is not captured in the data system.

FDO: Future data opportunity; there is an opportunity for NPDUIS to capture this type of data in the future.

Public: Alberta Blue Cross manages and collects prescription drug data on behalf of Alberta Health for Alberta’s public drug insurance program, which assists Alberta residents in paying for eligible prescription drugs and designated medical supplies. NPDUIS holds data from some public drug programs through quarterly submissions (since January 2000), and this data is linkable to most data holdings across CIHI. The following list identifies the public drug plans in NPDUIS along with the plans that could be acquired in the future.

Available in NPDUIS

- Non-Group
- Palliative
- Seniors

Not available in NPDUIS

- Alberta HIV Pre-Exposure Prophylaxis (PrEP) Program
- Diabetic Supply Coverage
- Disease Control and Prevention
- Insulin Pump Therapy Program
- Low-Income Health Benefits Programs
- Opioid Agonist Therapy (OAT) Gap Coverage Program
- Outpatient Cancer Drug Benefit Program (OCDBP)
- Rare Diseases Drug Program
- Retina Anti-Vascular Endothelial Growth Factor Program for Intraocular Disease (RAPID)
- Short-Term Exceptional Drug Therapy Program
- Specialized High-Cost Drug Program
- Women’s Choice Program

Private: The Pharmaceutical Information Network (PIN) is a drug information system that contains information on prescription drugs dispensed through most community pharmacies in Alberta since 2004, including drugs paid for by private plans. The system also stores prescription records entered by physicians. NPDUIS does not receive private drug plan data from Alberta.

Drugs for rare diseases: Data for DRDs is currently held in multiple systems, since most DRDs are funded through various mechanisms/organizations, such as Alberta Health's Rare Diseases Drug Coverage Program, Alberta Drug Benefit List (special authorization) and Short-Term Exceptional Drug Therapy Program; Alberta Cancer Registry's Outpatient Cancer Drug Benefit Program; and Alberta Health Services (for DRDs administered in hospitals). NPDUIS contains limited data for DRDs through public program submissions.

Cancer drugs: Alberta Cancer Registry contains cancer-related information on patients covered through the Outpatient Cancer Drug Benefit Program, as well as information on take-home oncology drugs and drugs administered in inpatient and outpatient clinics. NPDUIS does not currently receive cancer drug data from Alberta.

Hospital drugs: Data from all acute care hospital pharmacies that are under the domain of Alberta Health Services is stored in the Connect Care system. ANP, another data system, collects information from hospitals, public and private labs, community pharmacies, diagnostic imaging facilities, primary care clinics, public health units and other allied professional clinics. It is important to note that once Connect Care is fully implemented, there will be some duplication of the clinical repositories in ANP and Connect Care.³⁸ NPDUIS does not currently receive data on drugs administered in hospitals.

British Columbia

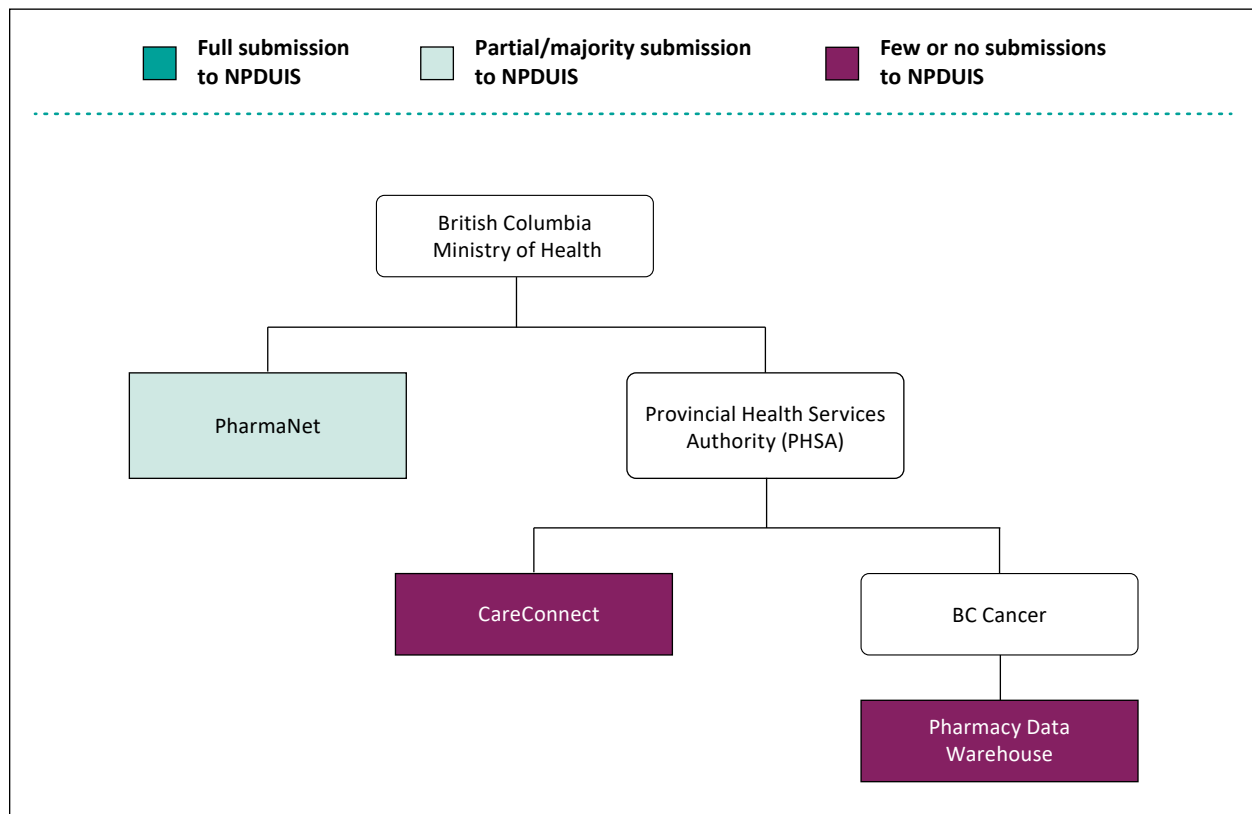
Overview

The Provincial Health Services Authority (PHSA) works together with the B.C. Ministry of Health to provide high-quality, appropriate and timely health services to British Columbians. The Ministry of Health oversees the BC PharmaCare program, while the PHSA is responsible for working with 5 RHAs and the First Nations Health Authority to plan and deliver specialized services, including cancer care, hospital care and First Nations health services. B.C.'s Pharmaceutical Care Management Strategy focuses on key actions related to improving capabilities and expanding broader integration of data across the health system to drive evidence-based policies and services.³⁹

The following key prescription drug data assets have been identified for B.C.: PharmaNet claims and dispenses, Pharmacy Data Warehouse and CareConnect for drugs dispensed in hospitals (see Figure 12). With multiple health authorities in the province, B.C. faces challenges related to database silos, infrastructure issues and data access.

In terms of CIHI data, British Columbia is 1 of 3 jurisdictions that submit all community-dispensed prescription drug data to NPDUIS. British Columbia uses NPDUIS data to understand trends in uptake of new prescription drugs and to engage in integrated health system planning and governance for pharmaceutical care management. B.C. also uses CIHI data for enhanced analytics for improved population health planning that supports targeted interventions and optimal drug use.

Figure 12 Overview of current and potential NPDUIS data sources, British Columbia



Summary of findings: Current and potential NPDUIS data sources, British Columbia

PharmaNet is a current data source that submits data to NPDUIS. Table 13 presents an overview of potential data sources in British Columbia, showing the data available in the 5 data categories within the scope of this report.

Table 13 Data systems applicable to the All Drugs, All People data system, British Columbia

Data holder	Data system	Data coverage	Data categories					Data is available in NPDUIS
			Public	Private	DRD	Cancer	Hospital	
B.C. Ministry of Health	PharmaNet	Province-wide system for prescription drugs and medical supplies dispensed through community pharmacies and outpatient pharmacies.	Y	Y	Y	Y	N	Y
BC Cancer	Pharmacy Data Warehouse	Records of all approved systemic cancer therapies delivered in hospital, ambulatory clinics and outpatient facilities.	N	N	Y	Y	Y	FDO
Provincial Health Services Authority	CareConnect	CareConnect offers access to hospital encounters from 5 health authorities within B.C.: Fraser Health, Island Health, Northern Health, Provincial Health Services Authority, and Vancouver Coastal Health & Providence Health Care.	N	N	Y	Y	Y	FDO

Notes

For the purpose of this report, the prescription drug data categories are defined as follows:

- Public: Data on drugs that are dispensed through community pharmacies for populations eligible under public drug programs.
- Private: Data on drugs that are financed privately (either through private insurance or out of pocket) and dispensed through community pharmacies.
- DRD: Data on drugs for rare diseases that is held by public drug programs, private drug plans, hospitals or health care facilities.
- Cancer: Data on cancer drugs that is held by cancer agencies, public drug programs or private drug plans.
- Hospital: Data on drugs that are administered in hospitals and health care facilities.

Y: Yes; this type of data is captured in the data system.

N: No; this type of data is not captured in the data system.

FDO: Future data opportunity; there is an opportunity for NPDUIS to capture this type of data in the future.

Public: NPDUIS holds data from most public drug programs through monthly submissions (since January 2006), and this data is linkable to most data holdings across CIHI. The following list identifies the pharmacare plans in NPDUIS along with the plans that could be acquired in the future.

Available in NPDUIS

- Assurance
- Children in the At Home Program
- Cystic Fibrosis
- Fair PharmaCare
- Long-Term Care
- Palliative Care
- Psychiatric Medications
- Recipients of B.C. Income Assistance
- Smoking Cessation

Not available in NPDUIS

- First Nations Health Benefits
- HIV/AIDS
- Medication Management

Private: Data on all prescription drugs dispensed through community pharmacies is entered into PharmaNet, the Ministry of Health’s drug information system. NPDUIS has captured these data records through monthly submissions from PharmaNet since 2006. Private records in NPDUIS contain limited information on costs.

Drugs for rare diseases: Data on DRDs that are approved for exceptional case-by-case funding by the Provincial Health Services Authority is not submitted to NPDUIS. However, NPDUIS contains partial data for some DRDs through PharmaNet submissions.

Cancer drugs: The B.C. Ministry of Health and BC Cancer are the main custodians of cancer data. BC Cancer holds the Pharmacy Data Warehouse. This data is not submitted to NPDUIS.⁴⁰ The vast majority of take-home cancer treatment drugs are dispensed through hospitals and BC Cancer because the cost is covered by BC Cancer. Information on oral/ take-home cancer treatment drugs dispensed to outpatients is entered into the PharmaNet system by the hospitals dispensing the drugs. Moreover, limited data on oral cancer drugs dispensed through community pharmacies is transferred to PharmaNet and is available in NPDUIS through data submissions by the B.C. Ministry of Health.

Hospital drugs: Records for drugs administered in hospitals are not centralized. This data is stored in several information systems, including BC Cancer’s system and MEDITECH and Cerner EHRs. PHSA also holds hospital data in the CareConnect system. Data from these systems is not submitted to NPDUIS.

Yukon

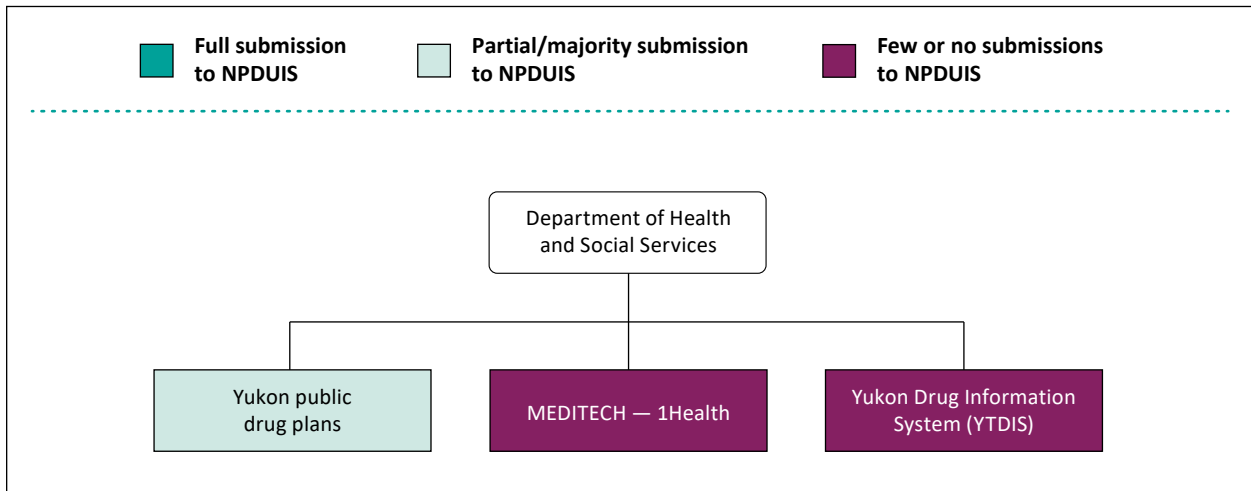
Overview

In the Yukon, the Department of Health and Social Services (HSS) is responsible for service delivery in community, mental health and residential care settings. However, as recommended in the *Putting People First* report, the Government of Yukon is working with health system partners and Yukon First Nations to create Health and Wellness Yukon, “a new arm’s-length government agency that delivers basic health and social services in the territory.”⁴¹ The Yukon’s main strategic goal is to make health care and social services more integrated, collaborative and people-centred. To achieve this, the Yukon is investing in infrastructure to support health and social data collection, usage and reporting. The Government of Yukon and the Government of Canada are working together to improve health care services for all Yukoners, and on July 6, 2023, the Government of Canada announced an investment of \$380 million in federal funding over 10 years in the Yukon.⁵¹

The following key prescription drug data assets have been identified for the Yukon: Yukon public drug plans, Yukon Drug Information System and MEDITECH — 1Health (see Figure 13). The territory indicated that while prescription drug data for the Social Assistance program does reside with the HSS, it is not easily accessible and reportable due to the methods used for payment/coverage. It is noted that, although prescription drug data is available, the territory faces challenges similar to those experienced in other jurisdictions, such as DIS data quality, dispersed data, methods used for payment/coverage and multiple data custodians.

In terms of CIHI data, HSS currently submits public drug plan data to NPDUIS. The territory uses NPDUIS data to understand health expenditures, drug utilization trends and comparative analyses on national averages.

Figure 13 Overview of current and potential NPDUIS data sources, Yukon



Summary of findings: Current and potential NPDUIS data sources, Yukon

The Yukon’s 3 drug plans are current data sources that submit data to NPDUIS. Table 14 presents an overview of potential data sources in the Yukon, showing the data available in the 5 data categories within the scope of this report.

Table 14 Data systems applicable to the All Drugs, All People data system, Yukon

Data holder	Data system	Data coverage	Data categories					Data is available in NPDUIS
			Public	Private	DRD	Cancer	Hospital	
Department of Health and Social Services	Yukon public drug plans	Contain information on prescription drugs and medical supplies dispensed through community pharmacies in the Yukon. The DIS does not capture data on intravenous, intramuscular, subcutaneous (IV/IM/SC) cancer treatments.	Y	N	Y	Y	N	Y
	Yukon Drug Information System	Contains information on prescription drugs and medical supplies dispensed through community pharmacies in the Yukon. The DIS does not capture data on IV/IM/SC cancer treatments.	Y	Y	Y	Y	N	FDO
	MEDITECH — 1Health	A single integrated electronic health record system. It also contains data on drugs administered in hospital.	Y	Y	Y	Y	Y	FDO

Notes

For the purpose of this report, the prescription drug data categories are defined as follows:

- Public: Data on drugs that are dispensed through community pharmacies for populations eligible under public drug programs.
- Private: Data on drugs that are financed privately (either through private insurance or out of pocket) and dispensed through community pharmacies.
- DRD: Data on drugs for rare diseases that is held by public drug programs, private drug plans, hospitals or health care facilities.
- Cancer: Data on cancer drugs that is held by cancer agencies, public drug programs or private drug plans.
- Hospital: Data on drugs that are administered in hospitals and health care facilities.

Y: Yes; this type of data is captured in the data system.

N: No; this type of data is not captured in the data system.

FDO: Future data opportunity; there is an opportunity for NPDUIS to capture this type of data in the future.

Public: Prescription drug data is collected and stored by the HSS. NPDUIS captures all pharmacare records through quarterly submissions (since January 2007). However, data on drugs covered by Yukon Social Assistance is not easily accessible and reportable due to the methods used for payment/coverage of the drugs and is therefore not submitted. The following list identifies the pharmacare plans in NPDUIS along with the plans that could be acquired in the future.

Available in NPDUIS

- Children’s Drug and Optical Program
- Chronic Disease Program
- Pharmacare

Not available in NPDUIS

- Yukon Social Assistance

Private: The Yukon has implemented the DIS, which contains information on all drugs dispensed through community pharmacies in the territory. However, the system does not capture out-of-territory dispenses such as cancer drugs mailed from BC Cancer. CIHI does not receive DIS data on drugs dispensed in the community that are paid for through private drug plans or out of pocket.

Drugs for rare diseases: DRD data lies with different organizations and systems, such as public drug programs, the DIS and hospitals. Currently, NPDUIS receives data for a small number of DRDs through public drug program submissions.

Cancer drugs: Cancer drug data exists in different systems, mainly in public drug programs. However, identifying data integration between these systems requires further investigation and engagement.

Data for cancer drugs paid for through public drug programs is submitted to NPDUIS. In other words, data for publicly funded drugs dispensed through community pharmacies is currently available in NPDUIS.

Hospital drugs: The MEDITECH health information system (also known as 1Health), launched in June 2021, contains hospital patient data including information on lab tests, medications and appointments. CIHI does not receive data on drugs dispensed in hospitals.

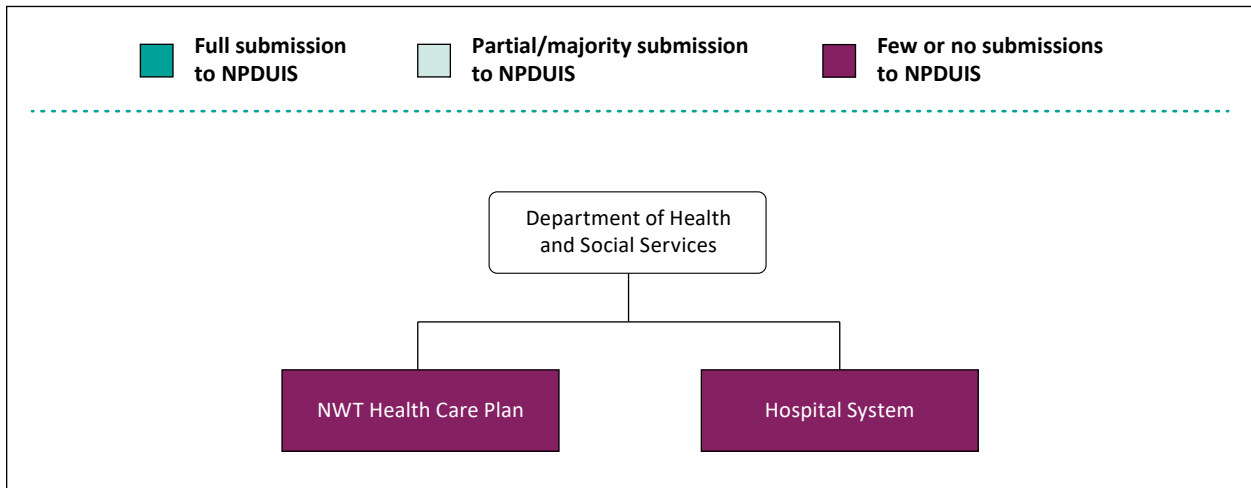
Northwest Territories

Overview

One of the strategic goals that the Northwest Territories aims to achieve over the next 3 years is to move to a one-system approach for the delivery of health and social services.⁴² This approach aims to address several of the territory’s priorities, including chronic disease prevention and management, mental health and substance use strategies, and significant health status disparities across its population.⁴²

The following key prescription drug data assets have been identified for the Northwest Territories: NWT Health Care Plan and Hospital System (see Figure 14). Pan-Canadian data at CIHI would support the Northwest Territories in presenting a comparative view of the health status of the territory’s population. Through CIHI’s engagement with the Northwest Territories, the main concerns that arose were data access, resources and infrastructure. The Northwest Territories currently does not submit data to CIHI; however, the territory hopes to understand health expenditures, the impact of new drugs and utilization trends using CIHI data.

Figure 14 Overview of current and potential NPDUIS data sources, Northwest Territories



Summary of findings: Current and potential NPDUIS data sources, Northwest Territories

Table 15 presents an overview of potential data sources in the Northwest Territories, showing the data available in the 5 data categories within the scope of this report.

Table 15 Data systems applicable to the All Drugs, All People data system, Northwest Territories

Data holder	Data system	Data coverage	Data categories					Data is available in NPDUIS
			Public	Private	DRD	Cancer	Hospital	
Department of Health and Social Services	NWT Health Care Plan	Contains information on publicly funded prescription drugs and medical supplies.	Y	N	Y	Y	N	FDO
	Hospital System	Contains information on drugs administered in hospitals.	N	N	Y	Y	Y	FDO

Notes

For the purpose of this report, the prescription drug data categories are defined as follows:

- Public: Data on drugs that are dispensed through community pharmacies for populations eligible under public drug programs.
- Private: Data on drugs that are financed privately (either through private insurance or out of pocket) and dispensed through community pharmacies.
- DRD: Data on drugs for rare diseases that is held by public drug programs, private drug plans, hospitals or health care facilities.
- Cancer: Data on cancer drugs that is held by cancer agencies, public drug programs or private drug plans.
- Hospital: Data on drugs that are administered in hospitals and health care facilities.

Y: Yes; this type of data is captured in the data system.

N: No; this type of data is not captured in the data system.

FDO: Future data opportunity; there is an opportunity for NPDUIS to capture this type of data in the future.

Data for publicly funded prescription drugs covered through the NWT Health Care Plan is collected by the Department of Health and Social Services and administered through Alberta Blue Cross. The Extended Health Insurance programs include the Specified Disease Conditions Program, the Extended Health Benefits for Seniors Program and the Métis Health Benefits Program. Further study and engagement are required to understand data on prescription drugs that are privately funded, cancer drugs, DRDs and hospital drugs. CIHI does not currently receive any prescription drug data from the Northwest Territories.

Available in NPDUIS

- Not applicable

Not available in NPDUIS

- NWT Health Care Plan

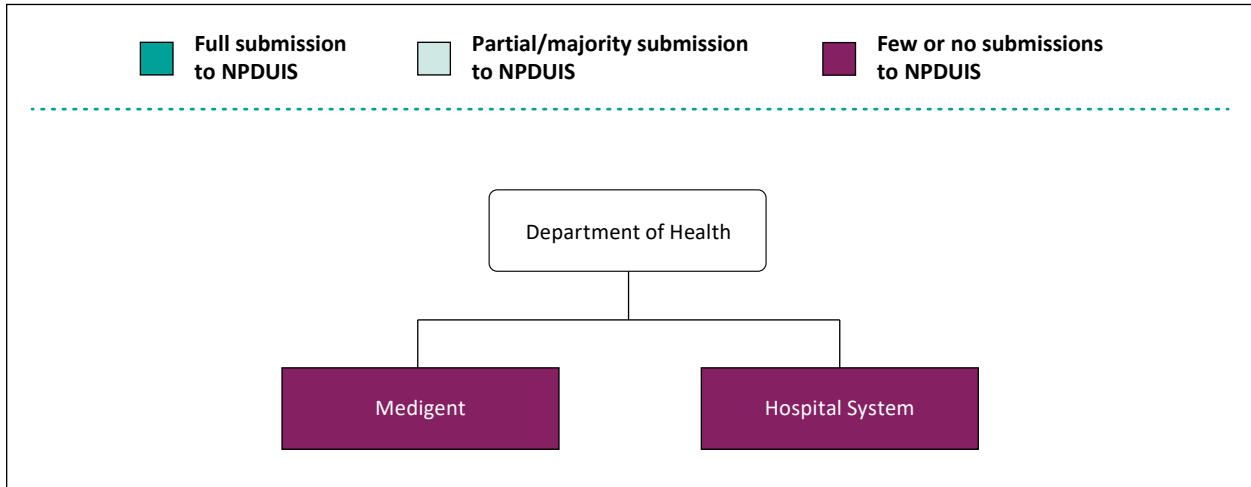
Nunavut

Overview

Nunavut’s recent business plan details the services and priorities of the Health Care Service Delivery Branch. One of the priorities is to provide efficient administration of the Nunavut Health Care Plan, both in and out of territory, for all Nunavut residents, including implementing a mental health strategy and working toward enhanced and appropriate in-territory medical infrastructure and medical care for Elders.⁴³

The following key prescription drug data assets have been identified for Nunavut: Medigent and Hospital System (see Figure 15).

Figure 15 Overview of current and potential NPDUIS data sources, Nunavut



Summary of findings: Current and potential NPDUIS data sources, Nunavut

Table 16 presents an overview of potential data sources in Nunavut, showing the data available in the 5 data categories within the scope of this report.

Table 16 Data systems applicable to the All Drugs, All People data system, Nunavut

Data holder	Data system	Data coverage	Data categories					Data is available in NPDUIS
			Public	Private	DRD	Cancer	Hospital	
Department of Health — Nunavut Health Insurance Division	Medigent	Holds data on prescribed drugs, medical supplies and equipment related to eligible clients who have a chronic condition and/or seniors enrolled in the Extended Health Benefits plan (EHB). In order to access or be enrolled in the EHB, residents must be enrolled in the Nunavut Health Care Plan. The EHB is a supplemental program offered to eligible residents who require products and services beyond the coverage included in the Nunavut Health Care Plan.	Y	N	Y	Y	N	FDO
Department of Health	Hospital System	Contains information on drugs administered in hospitals.	N	N	Y	Y	Y	FDO

Notes

For the purpose of this report, the prescription drug data categories are defined as follows:

- Public: Data on drugs that are dispensed through community pharmacies for populations eligible under public drug programs.
- Private: Data on drugs that are financed privately (either through private insurance or out of pocket) and dispensed through community pharmacies.
- DRD: Data on drugs for rare diseases that is held by public drug programs, private drug plans, hospitals or health care facilities.
- Cancer: Data on cancer drugs that is held by cancer agencies, public drug programs or private drug plans.
- Hospital: Data on drugs that are administered in hospitals and health care facilities.

Y: Yes; this type of data is captured in the data system.

N: No; this type of data is not captured in the data system.

FDO: Future data opportunity; there is an opportunity for NPDUIS to capture this type of data in the future.

The Department of Health delivers all health services in Nunavut and provides prescription drug and medical supply coverage to all eligible Nunavut residents under the Nunavut Health Care Plan, the Extended Health Benefits (EHB) plan and the Non-Insured Health Benefits (NIHB) program — a federal plan. CIHI does not currently receive any prescription drug data from Nunavut.

Available in NPDUIS

- Not applicable

Not available in NPDUIS

- Extended Health Benefits

Nunavut is working with HealthIT to better understand the long-term plan for an EHR.

Data for drugs administered in health facilities, including Qikiqtani General Hospital, health centres and boarding homes, is stored in the MEDITECH pharmacy module, MEDITECH progress notes and Medigent system, respectively.

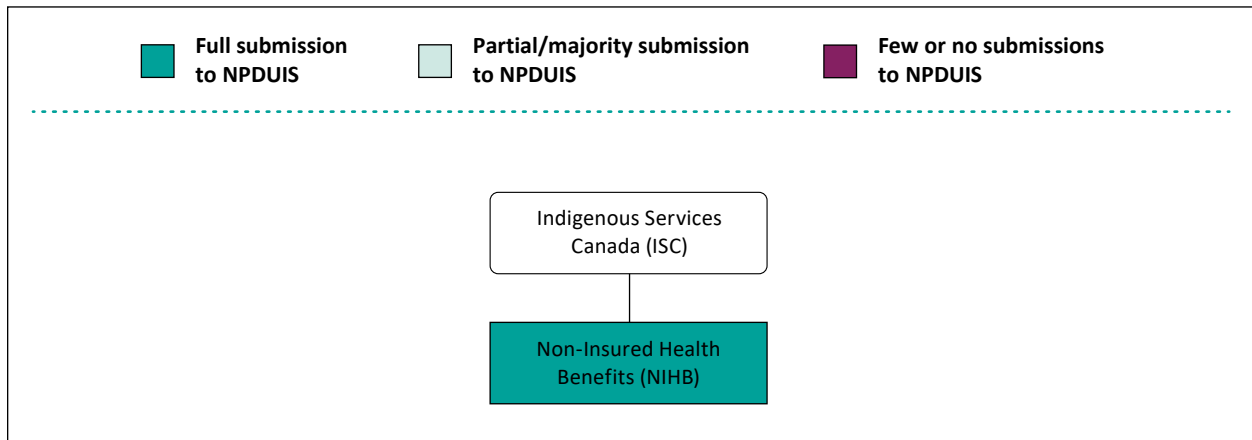
Indigenous Services Canada

Overview

Indigenous Services Canada (ISC) was formally established in July 2019 with the mandate to work with First Nations, Inuit and Métis Peoples to improve access to high-quality services; improve well-being in Indigenous communities across Canada; and support Indigenous Peoples in assuming control of the delivery of services at the pace and in the ways they choose.⁴⁴ The First Nations and Inuit Health Branch, including the Non-Insured Health Benefits (NIHB) program, was transferred from Health Canada to ISC as of that date.

ISC's NIHB program provides health benefits to eligible First Nations and Inuit populations. The program covers prescription drugs and over-the-counter medications, dental and vision care, medical supplies and equipment, mental health counselling and transportation to access health services not available locally.

Figure 16 Overview of current and potential NPDUIS data sources, Indigenous Services Canada



Summary of findings: Current and potential NPDUIS data sources, Indigenous Services Canada

ISC's NIHB program is a current data source that submits data to NPDUIS, as shown in Table 17.

Table 17 Data systems applicable to the All Drugs, All People data system, Indigenous Services Canada

Data holder	Data system	Data coverage	Data categories					Data is available in NPDUIS
			Public	Private	DRD	Cancer	Hospital	
Indigenous Services Canada (ISC)	Health Information and Claims Processing Services (HICPS)	Contains data on claims related to pharmacy services, medical supplies and equipment, dental care, vision care and mental health counselling.	Y	N	Y	Y	N	Y

Notes

For the purpose of this report, the prescription drug data categories are defined as follows:

- Public: Data on drugs that are dispensed through community pharmacies for populations eligible under public drug programs.
- Private: Data on drugs that are financed privately (either through private insurance or out of pocket) and dispensed through community pharmacies.
- DRD: Data on drugs for rare diseases that is held by public drug programs, private drug plans, hospitals or health care facilities.
- Cancer: Data on cancer drugs that is held by cancer agencies, public drug programs or private drug plans.
- Hospital: Data on drugs that are administered in hospitals and health care facilities.

Y: Yes; this type of data is captured in the data system.

N: No; this type of data is not captured in the data system.

Express Scripts Canada, through the Health Information and Claims Processing Services (HICPS) contract, has been administering provider payments for NIHB's Pharmacy, Dental, and Medical Supplies and Equipment benefits since 2009. A new version of the HICPS system was implemented on June 29, 2020, which also included Vision Care and Mental Health benefits.

NPDUIS holds ISC's NIHB program data from 2000 to 2020; however, this data is used for specific purposes only. Persons who receive benefits under the NIHB program come from all jurisdictions across Canada. However, as of October 2017, prescription drug data processed on behalf of the First Nations Health Authority in British Columbia is not submitted to NPDUIS. CIHI receives some data on DRDs and cancer drugs from ISC.

Available in NPDUIS

- Non-Insured Health Benefits (NIHB) program

Not available in NPDUIS

- Not applicable

External barriers and limitations

Jurisdictional engagement and independent findings highlighted key challenges in prescription drug information systems and sources across Canada. Aligning with the Pan-Canadian Health Data Strategy series of reports,⁵² barriers and limitations include the following:

- **Data fragmentation:** A key barrier in the prescription drug data landscape is the fragmentation of drug data within jurisdictions. Drug data is stored across multiple data systems with a lack of connection between systems. Many jurisdictions hold pockets of siloed data that are stored in stand-alone systems that are difficult to access. Some jurisdictions continue to use paper-based drug data systems, particularly for records of cancer drugs and DRDs.
- **Data quality and completeness:** Drug data systems in many jurisdictions hold data that is not standardized and complete. Some common data quality concerns shared by jurisdictions include duplicate records, inconsistent data collection methods, missing data, limited data elements, lack of standardization in data fields and absence of a data standard. These data quality issues are more frequently seen in records of DRDs and drugs administered in hospitals.

- **Privacy and legal:** Legislative privacy concerns about data sharing and data governance vary across jurisdictions. Many jurisdictions find it challenging to navigate the complexity of legal and regulatory policies associated with sharing new flows of prescription drug data. Common barriers identified by jurisdictions that impede new drug data flows include limited clarity on permissible and intended uses, shared data custodianship and internal approval processes for data release.
- **Technical feasibility:** A few jurisdictions hold integrated health systems that are interconnected with provincial drug information systems and electronic health records. Others, however, operate legacy drug data systems that are limited in advanced functions and incompatible with most other provincial information systems.
- **Organizational resources:** Many jurisdictions report staffing and training constraints within the health system, particularly in areas of management, human resources and health information. Frequent changes to the structure of departments of health can impact decision-making and support required for the implementation of new projects and for operational maintenance of new data flows. Challenges related to limited financial resources for technical transformations and project management may also affect new workflows.

Conclusion

The purpose of this report was to gain insights into the prescription drug data landscape across jurisdictions (i.e., identifying data assets, gaps and limitations). The goal is to then leverage this information to enhance and modernize CIHI's NPDUIS in order for it to serve as a foundation for an All Drugs, All People data system.

The results highlight that some jurisdictions have well-established data infrastructure and systems in place, while others may require support. They also shed light on challenges associated with the quality, dispersion and siloed nature of prescription drug data. The fragmented DRD data across various health care provider organizations (i.e., public drug programs, hospitals, clinics and cancer centres), within and across jurisdictions, limits the ability to gain a holistic understanding of DRD use and spending on a national scale.

To overcome these challenges, it is essential for CIHI — in collaboration with federal, provincial and territorial partners — to build a stronger data foundation for an All Drugs, All People data system that will support health system decision-making.

Appendices

Appendix A: Linkability of CIHI's databases

Data holding	Submitting province/territory												
	N.L.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.*	Sask.	Alta.	B.C.	Y.T.	N.W.T.	Nun.
Canadian Joint Replacement Registry (CJRR)	Y	n/a	Y	Y	Y	Y	Z	Y	Y	Y	Y [†]	Y [†]	Y
Canadian Organ Replacement Register (CORR)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	n/a	Y	n/a
Canadian Patient Experiences Reporting System (CPERS)	n/a	n/a	Y	Y	n/a	Y	Z [†]	n/a	Y	Y	n/a	n/a	n/a
Continuing Care Reporting System (CCRS)	Y	n/a	Y	Y	n/a	Y	Z	Y	Y	Y	Y	n/a	n/a
Discharge Abstract Database (DAD)	Y	Y	Y	Y	E	Y	Z	Y	Y	Y	Y	Y	Y
Home Care Reporting System (HCRS)	Y	n/a	Y [†]	n/a	n/a	Y	Z	n/a	Y	Y	Y	n/a	n/a
National Ambulatory Care Reporting System (NACRS)	Y	Y	Y	n/a	E	Y	Z	Y	Y	Y	Y	n/a	n/a
National Prescription Drug Utilization Information System (NPDUIS)	Y	Y	Y	Y	E	Y	Z	Y	Y	Y	Y	n/a	n/a
National Rehabilitation Reporting System (NRS)	Y	Y	Y	Y	n/a	Y	Z	Y	Y	Y	n/a	n/a	n/a
Ontario Mental Health Reporting System (OMHRS)	Y	n/a	n/a	n/a	n/a	Y	Z	n/a	n/a	n/a	n/a	n/a	n/a
Patient-Level Physician Billing (PLPB) Repository	n/a	n/a	Y	n/a	n/a	Y	Z	Y	Y	Y	n/a	n/a	n/a
Primary Health Care Electronic Medical Record (PHC EMR)	Y	n/a	n/a	n/a	n/a	Y [‡]	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Notes

* Manitoba submits encrypted HCNs for Manitoba health card holders and unencrypted HCNs for health card holders from other provinces/territories. Therefore linkages cannot be performed for Manitoba patients who travel to other provinces and receive treatment in a hospital outside of Manitoba, as one HCN is encrypted and the other is not. Non-Manitoba residents who receive services in Manitoba are linkable.

† No current data available for at least the last 5 fiscal years; however, data for previous years is available.

‡ Ontario PHC EMR data is linkable only for Ontario patients with a health card type "OHIP." An iProv of "ON" must be imputed for these records.

Y: Persons (with "personal" HCNs) are linkable across all Y database–province combinations.

Z: Persons are linkable across all Z databases within the same province. These are the cases where we receive pre-encrypted HCNs, with consistent encryption within the province. See note below.

E: Persons are linkable only with individual E databases for a single province. For these cases, we receive pre-encrypted HCNs, with data set–specific encryption.

n/a: Not linkable.

A child sharing their mother's health care number (HCN) can be excluded from linkages in only those data holdings with information about year of birth.

Appendix B: Key definitions

All Drugs, All People: An integral component of CIHI's Pharmaceuticals Data and Information Roadmap that aims to build a data system that includes all populations and data sources beyond community pharmacies, such as hospitals, cancer care centres and sources with data on drugs for rare diseases. This data foundation can then be linked to other health administrative data sources for improvements in patient, population and health system outcomes.

drug formulary: A list of prescription drugs covered by a public, private or extended drug benefit insurance plan. Each plan can have different formularies that are subject to change.⁴⁹

drug information system (DIS): Provincial and territorial electronic systems containing information related to prescription drugs dispensed through community pharmacies.

drugs for rare diseases (DRDs): Medicinal products intended for the diagnosis, prevention or treatment of rare diseases or disease subtypes.⁴⁵

electronic health record (EHR): An electronic record maintained by health care providers that contains administrative clinical data, including information about prescription medications and medical history.

extended health benefits: Supplementary special authorization plans for prescription drugs not covered under government plans and private insurance plans.

jurisdiction: A province or territory, or the federal government of Canada.

National Prescription Drug Utilization Information System (NPDUIS): A CIHI database that contains pan-Canadian prescription claims-level data, focusing primarily on publicly funded drug benefit programs for 10 provinces, 1 territory and 1 federal drug plan. The database also contains supporting information for additional context, including formulary and drug product information and information on policies of public drug plans in Canada.⁴⁶

private drug plans: Private insurance prescription drug benefit plans for eligible groups.

public drug plans: Provincial and territorial government prescription drug benefit plans for eligible groups.⁴⁷

real-world data (RWD): Information about the health of individuals or the delivery and/or outcomes of health care that is collected outside of traditional clinical trials and thus reflects results within the context of a particular health care system.

real-world evidence (RWE): Evidence about the use, safety and effectiveness of a medical product, technology or drug that is based on or derived from analysis of data generated in a real-world health care setting.

record: A collection of information about a person's prescription drug usage. It may include demographic information, such as age, gender and postal code, as well as medication details, such as drug name, quantity and service date. It may also include other information, such as cost, drug program and service provider. This information is used to measure and analyze prescription drug use, trends and spending in Canada.

Appendix C: Text alternatives for figures

Text alternative for Figure 2: Potential drug data providers to CIHI

This figure shows general categories of potential drug data providers to support the All Drugs, All People data system. These include provincial drug information systems, public drug program databases, hospital information systems, cancer care agency repositories and stand-alone databases for drugs for rare diseases. There is potential for record-level drug data flow from these data providers to CIHI's NPDUIS.

Text alternative for Figure 3: Overview of current and potential NPDUIS data sources, Newfoundland and Labrador

This figure shows Newfoundland and Labrador's key prescription drug data systems and their respective data holders, along with information about their submissions to NPDUIS. The Newfoundland and Labrador Department of Health and Community Services holds data from the Newfoundland and Labrador Prescription Drug Program (NLPDP); NPDUIS receives partial submissions from this source. Newfoundland and Labrador Health Services holds data from the Newfoundland and Labrador Pharmacy Network (NLPN), HEALTHe NL, and the Newfoundland and Labrador Cancer Registry (NLCCR); NPDUIS receives few or no submissions from these 3 sources.

Text alternative for Figure 4: Overview of current and potential NPDUIS data sources, Prince Edward Island

This figure shows Prince Edward Island's key prescription drug data systems and their respective data holders, along with information about their submissions to NPDUIS. Health PEI holds data from the PEI Pharmacare Integrated Claims System; NPDUIS receives partial submissions from this source. It also holds data from the PEI Drug Information System (DIS) and the Oracle Cerner Clinical Information System; NPDUIS receives few or no submissions from these 2 sources.

Text alternative for Figure 5: Overview of current and potential NPDUIS data sources, Nova Scotia

This figure shows Nova Scotia's key prescription drug data systems and their respective data holders, along with information about their submissions to NPDUIS. The Department of Health and Wellness holds data from Nova Scotia Pharmacare; NPDUIS receives partial submissions from this source. It also holds data from the Nova Scotia Drug Information System (NSDIS); NPDUIS receives few or no submissions from this source. The Nova Scotia Health Authority (NSHA) holds data from One Person, One Record (OPOR); NPDUIS receives few or no submissions from this source.

Text alternative for Figure 6: Overview of current and potential NPDUIS data sources, New Brunswick

This figure shows New Brunswick's key prescription drug data systems and their respective data holders, along with information about their submissions to NPDUIS. The New Brunswick Department of Health holds data from the New Brunswick Drug Plan; NPDUIS receives partial submissions from this source. It also holds data from the New Brunswick Drug Information System (NBDIS) and various RHA/clinical information systems; NPDUIS receives few or no submissions from these sources.

Text alternative for Figure 7: Overview of current and potential NPDUIS data sources, Quebec

This figure shows Quebec's key prescription drug data systems and their respective data holders, along with information about their submissions to NPDUIS. The Régie de l'assurance maladie du Québec (RAMQ) holds data from the Public Prescription Drug Insurance Plan; NPDUIS receives full submissions from this source. The ministère de la Santé et des Services sociaux du Québec (MSSS) holds data from Cristal-Net and the Québec Health Record (QHR); NPDUIS receives few or no submissions from these 2 sources. Rossy Cancer Network (RCN) holds data from the RCN Cancer Registry; NPDUIS receives few or no submissions from this source.

Text alternative for Figure 8: Overview of current and potential NPDUIS data sources, Ontario

This figure shows Ontario's key prescription drug data systems and their respective data holders, along with information about their submissions to NPDUIS. The Ministry of Health holds data from the Health Network System; NPDUIS receives partial submissions from this source. It also holds data from the Narcotics Monitoring System (NMS); NPDUIS receives full submissions from this source. Ontario Health holds data from the Digital Health Drug Repository (DHDR); NPDUIS receives few or no submissions from this source. Additionally, Cancer Care Ontario (CCO), which is part of Ontario Health, holds data from the New Drug Funding Program (NDFP); NPDUIS receives few or no submissions from this source.

Text alternative for Figure 9: Overview of current and potential NPDUIS data sources, Manitoba

This figure shows Manitoba's key prescription drug data systems and their respective data holders, along with information about their submissions to NPDUIS. Manitoba Health, Seniors and Long-Term Care holds data from the Drug Program Information Network (DPIN); NPDUIS receives full submissions from this source. Shared Health Manitoba holds data from the Hospital Pharmacy Information System (BDM); NPDUIS receives few or no submissions from this source. CancerCare Manitoba holds data from the ARIA Oncology Information System; NPDUIS receives few or no submissions from this source.

Text alternative for Figure 10: Overview of current and potential NPDUIS data sources, Saskatchewan

This figure shows Saskatchewan's key prescription drug data systems and their respective data holders, along with information about their submissions to NPDUIS. eHealth Saskatchewan reports to the Saskatchewan Ministry of Health and the Saskatchewan Health Authority and holds data from the Pharmaceutical Information Program (PIP) and the BDM Hospital Management Software; NPDUIS receives few or no submissions from these 2 sources. The Saskatchewan Cancer Agency (SCA) reports to the Saskatchewan Ministry of Health and extracts data from the BDM Hospital Management Software and stores all the cancer medication dispensing data in a data warehouse housed by eHealth. eHealth Saskatchewan also holds data from the Saskatchewan Drug Plan Pharmacy Claims System; NPDUIS receives full submissions from this source.

Text alternative for Figure 11: Overview of current and potential NPDUIS data sources, Alberta

This figure shows Alberta's key prescription drug data systems and their respective data holders, along with information about their submissions to NPDUIS. Alberta Health holds data from the Pharmaceutical Information Network (PIN); NPDUIS receives few or no submissions from this source. Alberta Health also holds data from Alberta Blue Cross Data; NPDUIS receives partial submissions from this source. Alberta Health Services (AHS), which delivers medical care on behalf of Alberta Health, holds data from Connect Care and the Alberta Netcare Portal (ANP); NPDUIS receives few or no submissions from these 2 sources. Cancer Care Alberta, a branch of Alberta Health Services (AHS), holds data from ARIA Medical Oncology; NPDUIS receives few or no submissions from this source.

Text alternative for Figure 12: Overview of current and potential NPDUIS data sources, British Columbia

This figure shows British Columbia's key prescription drug data systems and their respective data holders, along with information about their submissions to NPDUIS. The British Columbia Ministry of Health holds data from British Columbia PharmaNet; NPDUIS receives full submissions from this source. Additionally, the British Columbia Ministry of Health works with the Provincial Health Services Authority (PHSA), which holds data from CareConnect; NPDUIS receives few or no submissions from this source. BC Cancer, an agency of the Provincial Health Services Authority (PHSA), holds data from the Pharmacy Data Warehouse; NPDUIS receives few or no submissions from this source.

Text alternative for Figure 13: Overview of current and potential NPDUIS data sources, Yukon

This figure shows the Yukon's key prescription drug data systems and their respective data holders, along with information about their submissions to NPDUIS. The Department of Health and Social Services holds data from the Yukon's public drug plans; NPDUIS receives partial submissions from these sources. The Department of Health and Social Services also holds data from MEDITECH — 1Health and the Yukon Drug Information System; NPDUIS receives few or no submissions from these 2 sources.

Text alternative for Figure 14: Overview of current and potential NPDUIS data sources, Northwest Territories

This figure shows the Northwest Territories' key prescription drug data systems and their respective data holders, along with information about their submissions to NPDUIS. The Department of Health and Social Services holds data from the NWT Health Care Plan and the Hospital System; NPDUIS receives few or no submissions from these 2 sources.

Text alternative for Figure 15: Overview of current and potential NPDUIS data sources, Nunavut

This figure shows Nunavut's key prescription drug data systems and their respective data holders, along with information about their submissions to NPDUIS. The Department of Health holds data from Medigent and the Hospital System; NPDUIS receives few or no submissions from these 2 sources.

Text alternative for Figure 16: Overview of current and potential NPDUIS data sources, Indigenous Services Canada

This figure shows Indigenous Services Canada's key prescription drug data system and its data holder, along with information about its submissions to NPDUIS. Indigenous Services Canada holds data from the Non-Insured Health Benefits (NIHB) program; NPDUIS receives full submissions from this source.

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