

# CIHI Data & Information Offerings

Presentation for the Community Data Program

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# Objectives

- Become familiar with CIHI's data & information offerings and health system performance web tools

# Agenda

- 1) About CIHI
- 2) Showcase of select CIHI data, reports & tools
- 3) Demonstration
  - Navigation of website (cihi.ca)
  - Your Health System web tools
  - Other tools

# About CIHI

# CIHI's mandate, vision and values



## About CIHI

- The Canadian Institute for Health Information (CIHI) is an independent, not-for-profit organization that provides essential information on Canada's health systems and the health of people living in Canada.

- **Mandate**

Deliver comparable and actionable information to accelerate improvements in health care, health system performance and population health across the continuum of care.

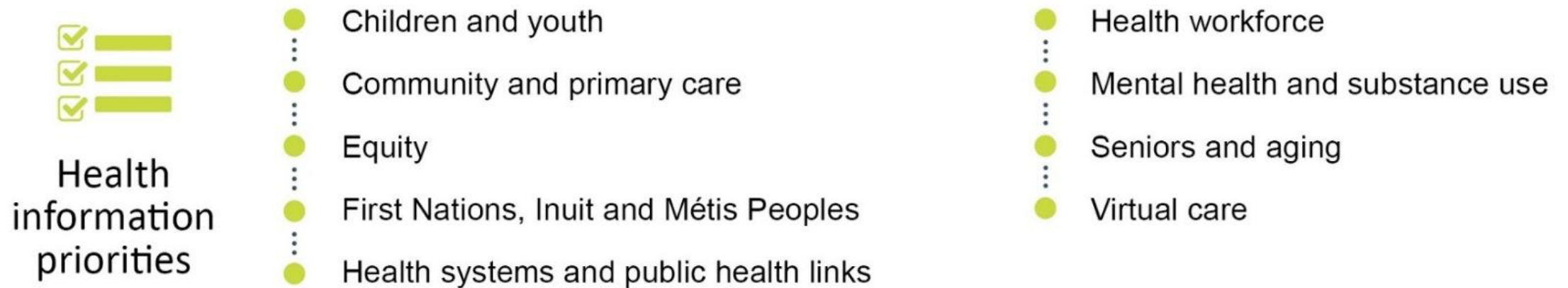
- **Vision**

Better data.  
Better decisions.  
Healthier Canadians.

- **Values**

- Inclusion
- Integrity
- Collaboration
- Excellence
- Innovation

# Focused on the priorities of our stakeholders



All our priorities are shaped through consultation with our stakeholders, as well as by our own assessment of health information trends, technologies and opportunities.

# CIHI hosts extensive linkable, pan-Canadian data across the health care continuum...



## Types of care

- Hospital and emergency
- Mental health
- Home care
- Long-term care
- Rehabilitation
- Pharmaceuticals
- Clinical registries: organ transplant/renal, hip and knee replacements; trauma
- More



## Patient-reported data

- Patient-reported outcome measures (PROMs)
- Patient-reported experience measures (PREMs)



## Health spending

- Patient costing data
- Hospital and regional health authority financial accounts
- Physician billing
- System-wide health expenditures



## Health workforce

- Physicians
- Nurses
- Occupational therapists
- Pharmacists
- Physiotherapists
- Allied health professionals
- More

### 28 data holdings

- 10 billion records
- 3 terabytes of unique records
- Pan-Canadian coverage

#### Linkable data:

- Example: Population Grouper links 8 databases, 3 provinces, over 23 million patients

# Publicly accessible open data

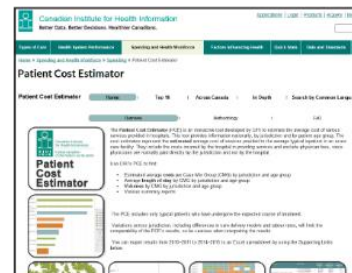
Examples

## Interactive analytical tools

### Your Health System



### Patient Cost Estimator

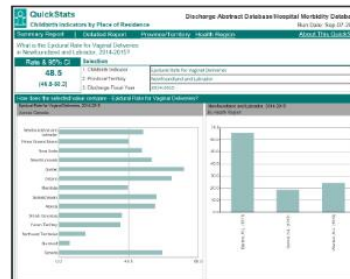


Please visit [CIHI's website](https://www.cihi.ca/en):

- [Access Data and Reports](#) & [Indicator Library](#)

## Quick Stats

### Interactive data



## Pre-formatted data tables

Year	Discharge	Amputation	Dialysis	Hospital Mortality
2010-2011	1,010,000	1,200	1,100	1,300
2011-2012	1,020,000	1,300	1,200	1,400
2012-2013	1,030,000	1,400	1,300	1,500
2013-2014	1,040,000	1,500	1,400	1,600
2014-2015	1,050,000	1,600	1,500	1,700
2015-2016	1,060,000	1,700	1,600	1,800
2016-2017	1,070,000	1,800	1,700	1,900
2017-2018	1,080,000	1,900	1,800	2,000
2018-2019	1,090,000	2,000	1,900	2,100
2019-2020	1,100,000	2,100	2,000	2,200

## Analytical publications





# Select CIHI Data Offerings

- Mental Health and Substance Use (MHSU)
- COVID-19 & Health System Capacity
- Reporting tools
- Other resources & making a data request



# CIHI publishes many MHSU indicators, measures and reports



## Indicators

- Shared Health Priorities – suite of 6 pan-Canadian MHSU indicators
- Repeat Hospital Stays for MHSU
- 30-Day Readmission for MHSU
- Worsened Depressive Mood in Long-Term Care
- Hospitalizations Entirely Caused by Alcohol
- Self-Harm Hospitalizations



## Measures

- Health Workforce (specialized HHR and physicians by specialty)
- Mental health inpatient costs
- Public health and community mental health and addictions services spending
- MHSU Hospitalizations and Patient Days by Diagnosis Category
- International and PTs comparisons for specific mental health illnesses



## Recent Reports

- Mental Health of Children and Youth in Canada (2022)
- Impact of COVID-19 on Health Workforce (2021)
- Impact of COVID-19 on Physician Services (2021)
- SHP Companion Reports Vol 1-3 (2019-2021)
- Unintended Consequences of COVID-19 on harms caused by substance use, self-harm behaviour (2021)
- Commonwealth Fund 2020 survey of general population (2021)
- Opioid Prescribing in Canada (2019)
- Health System Resources for Mental Health and Addictions Care in Canada (2019)

# Shared Health Priorities (SHP):

Achieving FPT consensus around comparable data and public transparency

## Shared federal, provincial and territorial (FPT) priorities:

- The growing demand for access to health services at home or in the community to help Canadians manage their health conditions and live safely at home
- The need for Canadians of all ages to have timely access to mental health and substance use services

**2017: FPT governments\* endorsed *A Common Statement of Principles on Shared Health Priorities (SHP)* along with an \$11 billion federal investment in home and community care and mental health and substance use services.**













- CIHI received funding to lead a process working with stakeholders to select and develop a common set of pan-Canadian indicators, which are now being publicly reported.





### Note

\* The federal government agreed to an asymmetrical arrangement with Quebec, distinct from the Common Statement of Principles.

# Indicator reporting

Year	Indicators			Indicator reporting
2019 (Year 1)	Hospital Stays for Harm Caused by Substance Use* 	Frequent Emergency Room Visits for Help With Mental Health and Substance Use* 	Hospital Stay Extended Until Home Care Services or Supports Ready† 	Indicator results are available in <a href="#">Your Health System: In Brief</a> ✓
2020 (Year 2)	Self-Harm, Including Suicide* 	Caregiver Distress† 	New Long-Term Care Residents Who Potentially Could Have Been Cared for at Home† 	Indicator results (plus updated 2019 indicators) are available in <a href="#">Your Health System: In Brief</a> ✓ Also Self-Harm Hospitalizations available in <a href="#">Your Health System: In Depth</a>
2021 (Year 3)	Wait Times for Community Mental Health Counselling* 	Wait Times for Home Care Services† 	Home Care Services Helped the Recipient Stay at Home†i 	Indicator results (plus updated 2019 and 2020 indicators) are available in <a href="#">Your Health System: In Brief</a> ✓
2022 (Year 4)	Navigation of Mental Health and Substance Use Services* 	Early Intervention for Mental Health and Substance Use Among Children and Youth* 	Death at Home or in Community† 	Indicator results (plus updated 2019, 2020 and 2021 indicators) are available <a href="#">in Your Health System: In Brief</a> ✓

 \* Mental health and substance use

 † Home and community care

i. Indicator development for Home Care Services Helped the Recipient Stay at Home led by Statistics Canada.

**Note:** More information can be found at [Shared Health Priorities](#)

# Region-level results for some SHP indicators

SHP indicators with region-level results in downloadable Excel files via YHS

For Self-Harm, Including Suicide, region-level results for Self-Harm Hospitalizations are available in [Your Health System: In Depth](#)

- 1. Hospital Stays for Harm Caused by Substance Use**
- 2. Frequent Emergency Room Visits for Help With Mental Health and Substance Use**
3. Caregiver Distress
4. Hospital Stay Extended Until Home Care Services or Supports Ready
5. New Long-Term Care Residents Who Potentially Could Have Been Cared for at Home



# Select CIHI Data Offerings

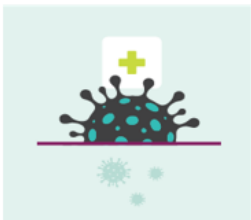
- Mental Health and Substance Use (MHSU)
- COVID-19 & Health System Capacity
- Reporting tools
- Other resources & making a data request

# CIHI's COVID-19 resources



COVID-19 RESOURCES	
Data collection and coding direction	
Data and information	
Impact of COVID-19 on Canada's health care systems	+
External data resources	

## Impact on Canada's health care systems



The big picture



Emergency departments



Hospital services



Physician services



Long-term care



Unintended consequences



Hospital patient experience



Home care services

- [COVID-19 resources page](#)
- [Impact of COVID-19 on Canada's health care systems](#)
- [COVID-19 Intervention Scan & Timeline](#)
- [Other reports & information](#), including for:
  - Virtual care & physician services
  - Long-term care
  - Health workforce
  - Patient experience
  - Unintended consequences (including for MHSU)

# Health System Capacity



Health System Capacity: Measures to Support System-Level Monitoring in Canada

## Rural Health Systems Model



Health workforce in Canada: In focus

- [Health System Capacity](#)
- [Health workforce](#)
- [Rural Health Systems](#)



# Select CIHI Data Offerings

- Mental Health and Substance Use (MHSU)
- COVID-19 & Health System Capacity
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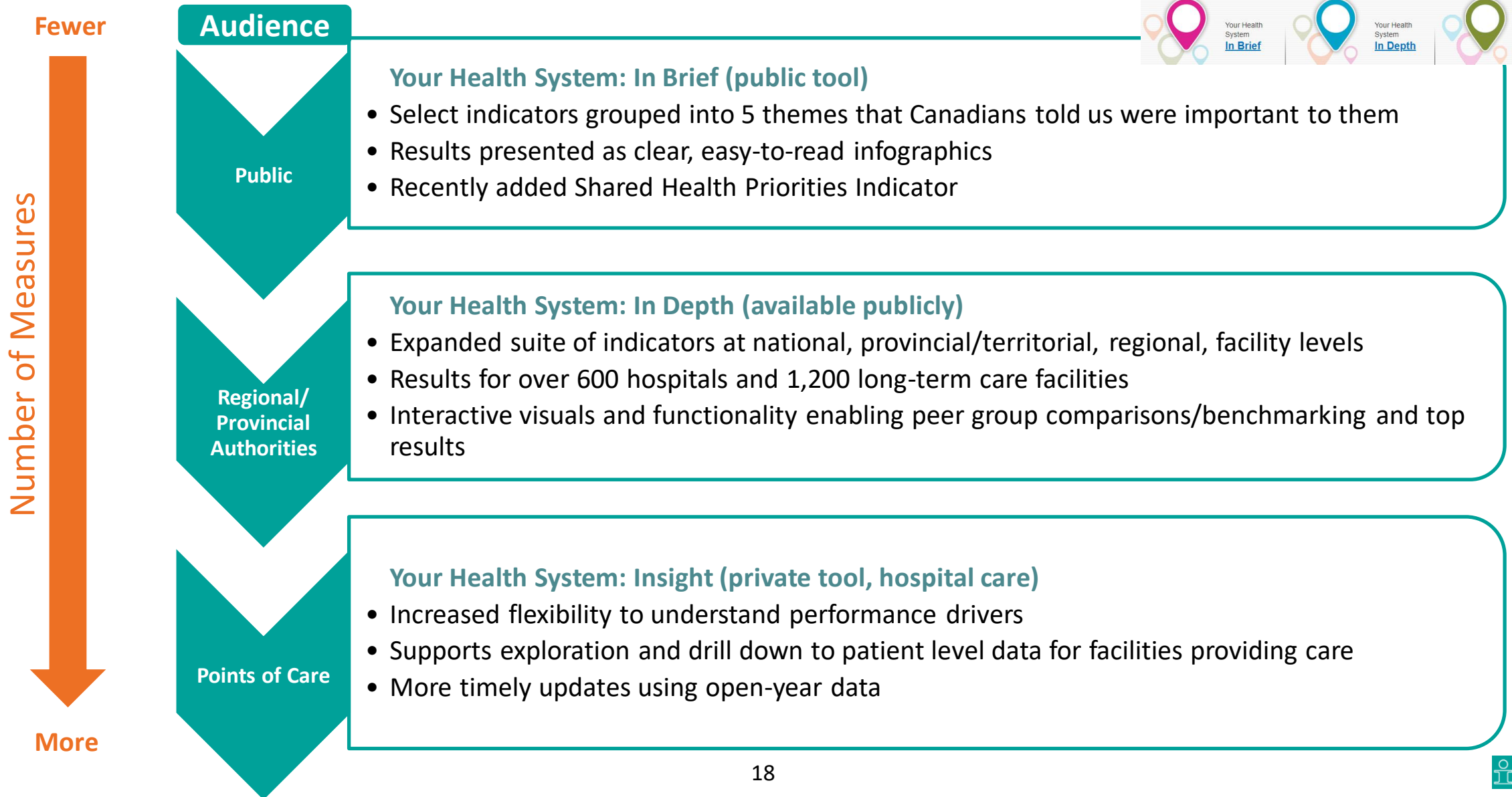
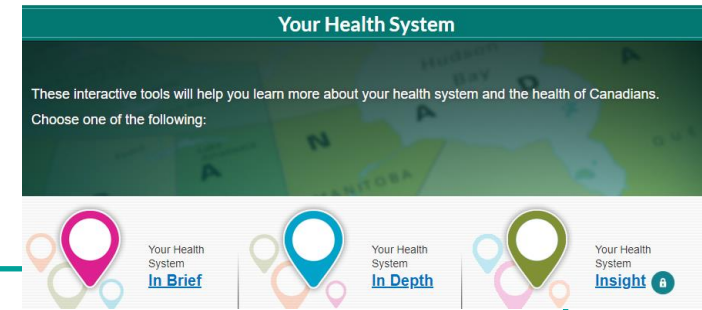
# Reporting tools



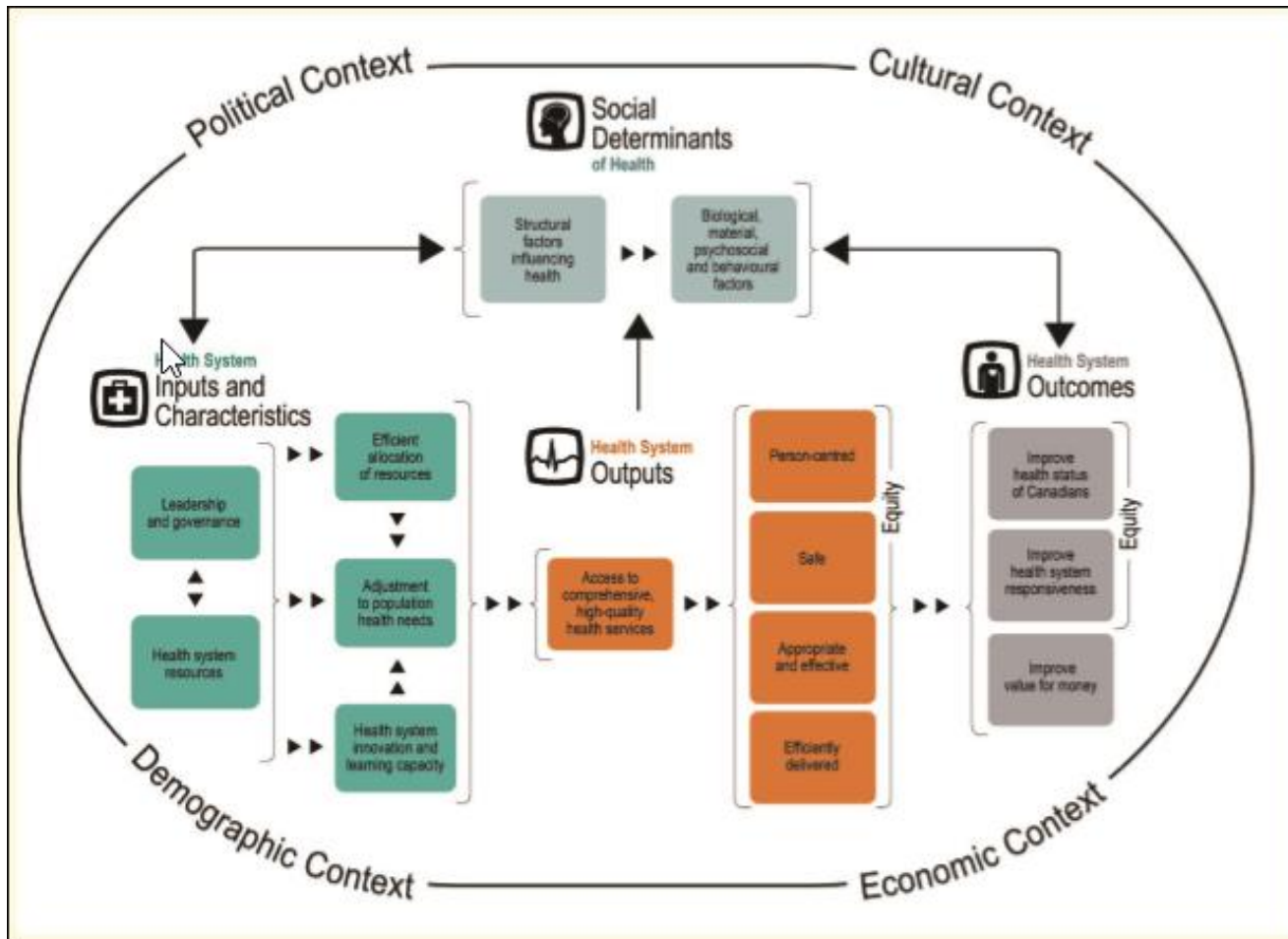
- [Your Health System](#)
- [Health Indicators e-Publication](#)
- [Wait Times for Priority Procedures in Canada](#)
- [Quick Stats](#)
- [Indicator Library](#)
- [OECD International Comparisons](#)

# Your Health System (YHS) web tool

## Interactive Health System Performance Reporting



# YHS is grounded in CIHI's Health System Performance Framework



## Main Themes:

1. Access
2. Person-Centredness
3. Safety
4. Appropriateness & Effectiveness
5. Efficiency
6. Health Status
7. Social Determinants

Source  
Canadian Institute for Health Information. *A Performance Measurement Framework for the Canadian Health System*. Ottawa, ON: CIHI; 2013.

# Health Indicators e-Publication

## CIHI Indicators



Canadian Institute for Health Information Health Indicators Interactive Tool

Better Data. Better Decisions. Healthier Canadians.

If you have a disability and would like CIHI information in a different format, visit our [Accessibility page](#).

**Note:** You must select at least one item from each of the lists below marked with (\*). Hold down the "Ctrl" key for multiple selections in a list.

### Geography (\*)

[0] Canada  
[10] Newfoundland and Labrador  
[1011] Eastern Health  
[1012] Central Health  
[1013] Western Health  
[1014] Labrador–Grenfell Health  
[11] Prince Edward Island  
[12] Nova Scotia  
[1201] Western Zone

Regions  
 Provinces  
 All

Change vintage:  Health regions are listed according to a geography vintage. The vintage label (YYYY-MM) refers to the effective date of the boundaries. ([What is a health region?](#))

### Data Year (\*)

Export

2021  
2020  
2019  
2018  
2017  
2016  
2015

All Years

### Characteristics

Indicator (*)	Health Dimension	Sex	Equity (Disparity)
30-Day Acute Myocardial Infarction In-Hospital Mortality	<input type="checkbox"/> Health Status	<input type="checkbox"/> Both	<input type="checkbox"/> Income
30-Day Acute Myocardial Infarction Readmission	<input type="checkbox"/> Health System Performance	<input type="checkbox"/> Male	
30-Day Medical Readmission	<input type="checkbox"/> Community and Health System Characteristics	<input type="checkbox"/> Female	
30-Day Obstetric Readmission			
30-Day Readmission for Mental Health and Substance Use			
30-Day Readmission for Mental Illness - T			
30-Day Readmission for Mental Illness, Age 15+ (General Hospital Only) - T			
30-Day Readmission: Patients Age 19 and Younger - T			
30-Day Stroke In-Hospital Mortality			
30-Day Surgical Readmission	<input type="checkbox"/> All		

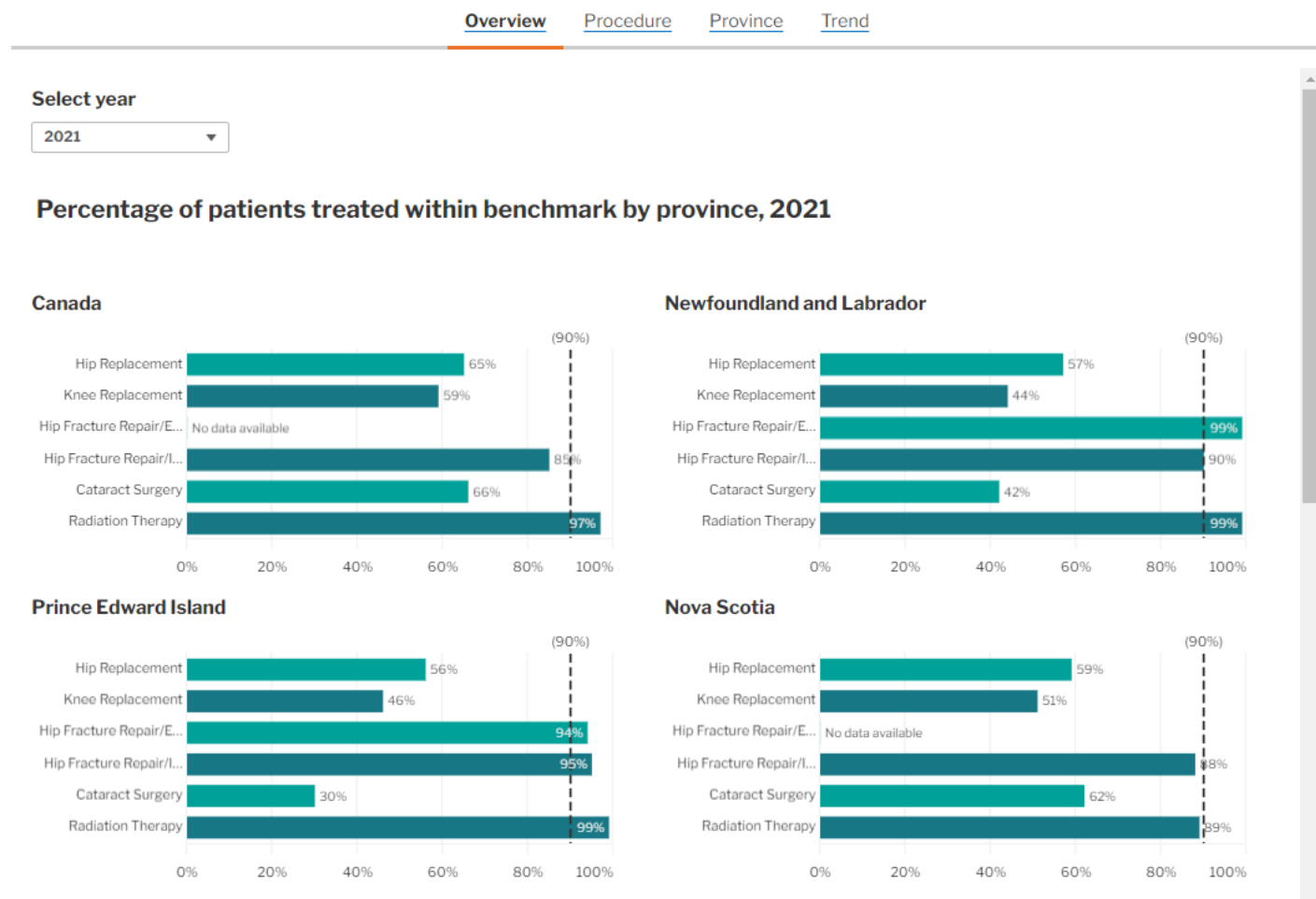
**Notes:**  
Only available data will be shown in the report.  
T - Series is Terminated.

- A large inventory of more than 80 health indicators for regions and provinces/territories, measuring health status, non-medical determinants of health, health system performance and community and health system characteristics
- Jointly produced by Statistics Canada

# Wait times for priority procedures tool

## Interactive data

Download an accessible version of the interactive data from the [Additional resources section](#) below.



## Priority procedures include:

- Hip Replacement\*
- Knee Replacement\*
- Hip Fracture Repair
- Cataract Surgery
- Radiation Therapy
- Bypass Surgery
- CT Scan
- MRI
- Bladder Cancer Surgery
- Breast Cancer Surgery
- Colorectal Cancer Surgery
- Lung Cancer Surgery
- Prostate Cancer Surgery

\* Regional data available

# Quick Stats

## Interactive data



## Pre-formatted data tables

What is the rising cardiac failure, by province/territory, 2014-2019? Prevalence rates by fiscal year

Fiscal year	Alberta		British Columbia		Ontario		Quebec		Atlantic	
	Population	Prevalence rate (per 100,000)	Population	Prevalence rate (per 100,000)	Population	Prevalence rate (per 100,000)	Population	Prevalence rate (per 100,000)	Population	Prevalence rate (per 100,000)
2014-2015	3,224,000	1.20	4,600,000	1.10	13,800,000	0.90	7,800,000	1.10	3,200,000	1.10
2015-2016	3,224,000	1.20	4,600,000	1.10	13,800,000	0.90	7,800,000	1.10	3,200,000	1.10
2016-2017	3,224,000	1.20	4,600,000	1.10	13,800,000	0.90	7,800,000	1.10	3,200,000	1.10
2017-2018	3,224,000	1.20	4,600,000	1.10	13,800,000	0.90	7,800,000	1.10	3,200,000	1.10
2018-2019	3,224,000	1.20	4,600,000	1.10	13,800,000	0.90	7,800,000	1.10	3,200,000	1.10

- Series of free, publicly available, reports that provide aggregate-level data about health care in Canada
- Some data is available at regional-levels

# Indicator Library

## ACCESS DATA AND REPORTS

Topics

Indicator library ▼

Supporting resources

Health system performance measurement ▼

Reports and releases

Data tables

Tools

Data holdings ▼

This list provides definitions and methodologies for more than 100 CIHI indicators, ranging from acute care, continuing care and rehabilitation to finance, spending and health human resources.

Learn more about how CIHI develops and releases [health indicators](#).

Filter by keyword

[More filters +](#)

Apply

Showing **1 to 20** of **144** results

Sort by alphabetical ▼

### [30-Day Acute Myocardial Infarction In-Hospital Mortality](#)

Indicator • Date updated: **December 2022** • Data availability: **1998 to 2021** (fiscal years)

This indicator calculates the risk-adjusted rate of all-cause in-hospital deaths occurring within 30 days of first admission with a diagnosis of acute myocardial infarction (AMI).

### [30-Day Acute Myocardial Infarction Readmission](#)

- **A one-stop-shop for CIHI indicators that includes definitions, methodologies, technical aspects, and more**
- **Metadata on over 100 indicators**
- **Highly popular among stakeholders – with visitors from around the world**
- **Iterative & on-going improvements to include visualizations & data**



# Select CIHI Data Offerings

- Mental Health and Substance Use (MHSU)
- COVID-19 & Health System Capacity
- Reporting tools
- Other resources & making a data request



# Other resources



Guidance on the Use of Standards  
for Race-Based and Indigenous  
Identity Data Collection and  
Health Reporting in Canada

## Health equity resources

- [Health equity & population health](#)
- [Measuring health inequalities](#)
  - [Equity stratifiers](#) & [toolkit](#)

# Custom Data Requests at CIHI - Overview

	Aggregate Data Requests	Record-Level Data Requests
Types of data	Tabulations and data summaries (e.g. counts, means, median) Indicator/rate calculations	De-identified records on hospitalizations / patients
Output Format	Data tables (typically in Excel)	SAS, or comma-delimited text files
Documentation required for requesting data	Aggregate Data Request Form and License Agreement	Record-level Data Request Form
		Secure Access Environment (SAE) Agreement SAE Terms of Use
		REB Approval and Study Protocol
Types of requestors	Researchers from academic institutions, research organizations, clinician groups, graduate students, for-profit	Researchers from academic institutions, research organizations, clinician groups, graduate students

# Custom Data Request Life Cycle

For more information see:

[Make a data request](#)

Step 1

- Client submits an Initial Inquiry

Step 2

- CIHI confirms feasibility of the data request

Step 3

- Client submits the Data Request Form, including other privacy, security and legal related documentation

Step 4

- CIHI prepares detailed specifications and preliminary cost estimate

Step 5

- Client approves the specifications and cost estimate

Step 6

- CIHI grants client access to data through Secure Access Environment and sends invoice (if applicable)

Step 7

- Client submits payment (if applicable)

# Demonstration

- Navigation of CIHI website
- Your Health System (In Brief & In Depth)
- Other tools





# Appendix

# Hospital and Emergency Care – CIHI Data Holdings

Data Holding	Description
<a href="#">Discharge Abstract Database (DAD)</a> / <a href="#">Hospital Morbidity Database (HMDB)</a>	<ul style="list-style-type: none"> <li>• Captures administrative, clinical and demographic information on hospital discharges. Some P/Ts also use the DAD to capture day surgery. Data from DAD is used to populate the HMDB and HMMHDB.</li> </ul>
<a href="#">National Ambulatory Care Reporting System (NACRS)</a>	<ul style="list-style-type: none"> <li>• Contains data for hospital-based and community-based ambulatory care (day surgery, outpatient and community-based clinics, emergency departments)</li> </ul>
<a href="#">Hospital Mental Health Database (HMMHDB)</a>	<ul style="list-style-type: none"> <li>• Contains data from all provinces and territories in Canada on hospitalizations for mental illness and addiction. Information is compiled from other databases (i.e., DAD, HMDB, HMHS, OMHRS)</li> </ul>
<a href="#">Ontario Mental Health Reporting System (OMHRS)</a>	<ul style="list-style-type: none"> <li>• Contains information about adult in-patient care in Ontario. OMHRS uses the Resident Assessment Instrument – Mental Health (RAI-MH). A small number of facilities in NFLD and MN also report to OMHRS.</li> </ul>

# Home and Community Care – CIHI Data Holdings

Data Holding	Description
<a href="#">Home Care Reporting System</a> (HCRS)	<ul style="list-style-type: none"><li>contains demographic, clinical, functional and resource utilization information on clients served by publicly funded home care programs in 8 provinces. Key components of the HCRS are the: Resident Assessment Instrument–Home Care and the interRAI–Contact Assessment.</li></ul>
<a href="#">EMR data for primary health care</a>	<ul style="list-style-type: none"><li>Alliance for Healthier Communities’ primary health care (PHC) electronic medical record (EMR) data from 73 community health centres in Ontario.</li></ul>
<a href="#">Community Mental Health Counseling Wait Times</a>	<ul style="list-style-type: none"><li>Contains aggregate-level data from provincial and territorial data collection systems.</li></ul>



# Long-term care; Rehabilitation – CIHI Data Holdings

Data Holding	Description
<a href="#">Continuing Care Reporting System</a> (CCRS)	<ul style="list-style-type: none"><li>contains demographic, clinical, functional and resource utilization information on individuals receiving continuing care services in hospitals or long-term care homes in Canada. Data is primarily collected using the Resident Assessment Instrument Minimum Data Set (RAI-MDS 2.0)</li></ul>
<a href="#">National Rehabilitation Reporting System</a> (NRS)	<ul style="list-style-type: none"><li>collects data from participating adult inpatient rehabilitation facilities and programs from 9 provinces in Canada.</li></ul>

# Pharmaceuticals – CIHI Data Holdings

Data Holding	Description
<a href="#">National Prescription Drug Utilization Information System</a> (NPDUIS)	<ul style="list-style-type: none"><li>• houses pan-Canadian prescription drug claims-level data, focusing primarily on publicly financed drug benefit programs. The database includes the following:<ul style="list-style-type: none"><li>• Claims data</li><li>• Formulary data</li><li>• Drug product information</li><li>• Plan information — outline of the administrative policies of public drug plans or programs in Canada.</li></ul></li><li>• Provides claims information for approx. 90% of seniors (65+years) in Canada</li></ul>

# Patient-reported experience – CIHI Data Holdings

Data Holding	Description
<a href="#">Canadian Patient Experiences Reporting System</a> (CPERS)	<ul style="list-style-type: none"><li>collects standardized patient experience information from participating hospitals across Canada</li></ul>
<a href="#">Commonwealth Fund Surveys</a>	<ul style="list-style-type: none"><li>provide comparable information on patient and provider experience in 11 developed countries, including Canada. The surveys target different populations on a 3-year cycle: i) general population (age 18 and older), ii) older adults. iii) primary care physicians.</li></ul>

# Health spending– CIHI Data Holdings

Data Holding	Description
<a href="#">Canadian MIS Database</a> (CMDB)	<ul style="list-style-type: none"> <li>contains financial and statistical operations information on public hospitals and regional health authorities across Canada.</li> </ul>
<a href="#">Canadian Patient Cost Database</a> (CPCD)	<ul style="list-style-type: none"> <li>contains detailed patient-level cost data from a subset of health service organizations in Nova Scotia, Ontario, Alberta and British Columbia. Costs are submitted for the following services: inpatient, outpatient, long-term care, complex continuing care, mental health, rehabilitation.</li> </ul>
<a href="#">Patient Level Physician Billing</a> (PLPB)	<ul style="list-style-type: none"> <li>captures administrative information on physician claims for publicly insured medical services funded through provincial and territorial medical care plans. Information from the PLPB is used to populate the National Physician Database (NPDB)</li> </ul>
<a href="#">National Health Expenditure Database</a> (NHEX)	<ul style="list-style-type: none"> <li>contains data on health spending in Canada by spending category and source of funding, from:             <ul style="list-style-type: none"> <li>Federal, provincial, territorial and municipal governments, as well as workers' compensation boards</li> <li>Other social security funds</li> <li>Private insurance and market research companies</li> </ul> </li> </ul>

# Health workforce – CIHI Data Holdings

Data Holding	Description
<a href="#">Scott's Medical Database</a> (SMDB)	<ul style="list-style-type: none"><li>• provides information on the number of physicians and their distribution across Canada. It contains demographic, education and migration information. Physicians can be uniquely identified in this database, allowing for the tracking of changes in physician type and physician movement among provinces and territories.</li></ul>
<a href="#">Health Workforce Database</a> (HWDB)	<ul style="list-style-type: none"><li>• contains information on more than 30 groups of health care professionals in Canada. Provides information on supply, distribution, migration, education, and employment.</li></ul>
<a href="#">National Physician Database</a> (NPDB)	<ul style="list-style-type: none"><li>• provides information on demographic characteristics of physicians, physician payments and physicians' level of activity.</li></ul>



Canadian Institute for Health Information

**Better data. Better decisions. Healthier Canadians.**



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