CMDB

Canadian MIS Database (CMDB)
User Guide

2021–2022

Canadian Institute
for Health Information

Institut canadien
d'information sur la santé

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Table of contents

Summary

This guide provides context and information on the use and understanding of data from the Canadian Management Information System (MIS) Database (CMDB) at the Canadian Institute for Health Information (CIHI). It also includes an assessment of aspects of data quality as defined by CIHI's Information Quality Framework.

The CMDB contains financial and statistical information on the day-to-day operations of public hospitals, other health facilities and regional health authorities across Canada. Data is collected according to a standardized framework known as the *Standards for Management Information Systems in Canadian Health Service Organizations* (MIS Standards).

The MIS Standards provides jurisdictions with a framework that health service organizations can use to track revenues, expenses and statistics that support local evidence-based decision-making, planning and overall management of their operations. Using this data in combination with clinical data from other CIHI databases can also help to inform decisions related to spending, resource allocation and funding. Data that is submitted to CIHI forms the foundation for financial indicators, which allow jurisdictions to see how they compare nationally.

Key variables in the CMDB include expense and revenue accounts, as well as statistics, such as Earned Hours, Inpatient Days, Beds Staffed and In Operation, Procedures, Exams and Visits.

Users should be aware of the following when using CMDB data:

- The MIS Standards' framework of accounts can be aggregated for reporting by province, territory, region, health care organization or functional centre.[i] This allows comparisons between and across jurisdictions and health service organizations at different levels.
- The population of reference[ii] includes all health service organizations across the continuum of care, ranging from hospitals to community-based health service organizations that operate under a regional health authority (RHA) and jurisdictional ministry of health.
- Due to differences in the basket of services provided by RHAs in each jurisdiction, data coverage of the services provided — particularly for non-hospital health service organizations — varies across the jurisdictions. For example, information about long-term care facilities is submitted to the CMDB only by provinces where RHAs operate the long-term care facilities. This variation leads to data gaps for some services.

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i. A functional centre is a subdivision of an organization used to record the budget and actual direct expenses, statistics and/or revenues that pertain to the function or activity being carried out.
ii. Population of reference refers to the population for which information should be available (expected submitters).

- Some health service organizations operate outside of health authorities, such as health services provided through federal government departments or ministries other than health, and some privately owned and operated health service organizations. The CMDB is currently not receiving data from these health service organizations.

- Data from about 600 hospitals and 2,000 non-hospital[iii] health service organizations is submitted to the CMDB. This includes data from all provinces and territories except Quebec and Nunavut.

- The province of Quebec does not use the MIS Standards to collect financial and statistical data. Instead, it uses another set of financial standards entitled *Manuel de gestion financière* (MGF). CIHI has mapped Quebec data to the MIS Standards for inpatient hospital services, so Quebec data can be used alongside data from other provinces and territories that use the MIS Standards.

- When data is submitted, a series of transformations are performed to ensure the data is comparable across the country. Therefore, data released by CIHI often varies slightly from data available at the jurisdictional or local level.

Please send feedback or questions to fsi@cihi.ca.

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iii. These are health service organizations other than hospitals.

Introduction

Information Quality Framework

Data and information quality is at the heart of everything CIHI does. This is embedded in our vision: *Better data. Better decisions. Healthier Canadians.*

CIHI's Information Quality Framework provides an overarching structure for all of our quality management practices related to capturing and processing data and transforming it into information products.

For further information on the Information Quality Framework, including our information life cycle, quality dimensions and quality principles, please visit our [Data and Information Quality web page](#).

Provincial/territorial data quality reports

CIHI produces annual data quality reports to assess the contribution of each province and territory to CIHI's databases (including CMDB) and to provide information on data advancement in key areas.

For the CMDB, these reports contain information about the quality of reporting of key data elements: Expenses, Revenues, Earned Hours, Inpatient Days, Beds Staffed and In Operation, Procedures, Exams and Visits.

The reports are shared with deputy ministers of health and key jurisdictional representatives across the country.

Canadian MIS Database

The CMDB houses financial and statistical data from approximately 600 public hospitals and 2,000 non-hospital health service organizations and RHAs across Canada. It does not include patient-level data, nor does it include any clinical data related to diagnoses and interventions, and quality of care.

Data collection began in 1995–1996, and coverage was incomplete and data quality inconsistent in the early years. Since 2004–2005, all jurisdictions except Quebec and Nunavut have submitted data annually to the CMDB. Quebec data is included in the CMDB through a mapping process that allows the inpatient hospital data elements to be available for Quebec (since 2007). Additional work is required to ensure the mapping applies to other settings in Quebec; as such, non-hospital data from Quebec is not currently available. Nunavut participates in CIHI's technical working group to support the MIS Standards but does not submit data to the CMDB.

Data is received annually, usually in October, about 6 months after the end of the fiscal year (April 1 to March 31).

MIS Standards

The MIS Standards provides a framework to collect financial and statistical information related to the day-to-day operations of health service organizations across Canada. The MIS Standards were developed and are maintained by CIHI in consultation with the provinces and territories. Each jurisdiction participates on CIHI's Financial Standards and Information (FSI) Technical Working Group, where proposed revisions to the standards are discussed.

The MIS Standards includes the charts of accounts, accounting principles and procedures, workload measurement systems and minimum reporting requirements. It is updated every 3 years. Although the MIS Standards sets out the minimum reporting requirements, the CMDB can accept data at greater levels of detail.

In addition, the accounts are designed so jurisdictions can add more detailed accounts to meet local reporting needs that are rolled up into national accounts prior to submitting to CIHI. Some jurisdictions may also use their own provincial financial reporting standard — typically a variation of the MIS Standards — and then map the data prior to submission.

To understand the CMDB data, you need to have an overall understanding of the financial and statistical account structure.
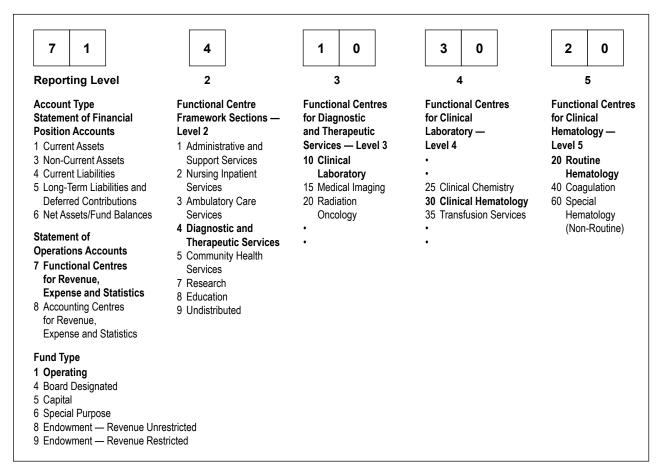
Figure 1   Structure of MIS Standards chart of accounts

Primary accounts

The primary account is used in conjunction with the secondary financial and statistical accounts to allow health service organizations to track their expenses, revenues and statistics associated with their various functional and accounting centres. A primary account may be a balance sheet account, a functional centre or an accounting centre, as indicated by the first digit in the account number.

For example, for primary account 71 4 10 30 20, the first digit (7) identifies the account as a functional centre, and the second digit (1) identifies the fund type as an operating fund. The third digit (4) identifies the account as being in the Diagnostic and Therapeutic framework, and the fourth and fifth digits (10) identify the functional centre as Clinical Laboratory. The sixth to ninth digits (30 20) capture further details about which clinical laboratory the account refers to.

Figure 2   Structure of primary account code

| 7 | 1 | | 4 | | 1 | 0 | | 3 | 0 | | 2 | 0 |

Reporting Level — 2 — 3 — 4 — 5

Account Type
Statement of Financial Position Accounts
1 Current Assets
3 Non-Current Assets
4 Current Liabilities
5 Long-Term Liabilities and Deferred Contributions
6 Net Assets/Fund Balances

Statement of Operations Accounts
7 Functional Centres for Revenue, Expense and Statistics
8 Accounting Centres for Revenue, Expense and Statistics

Fund Type
1 Operating
4 Board Designated
5 Capital
6 Special Purpose
8 Endowment — Revenue Unrestricted
9 Endowment — Revenue Restricted

Functional Centre Framework Sections — Level 2
1 Administrative and Support Services
2 Nursing Inpatient Services
3 Ambulatory Care Services
4 Diagnostic and Therapeutic Services
5 Community Health Services
7 Research
8 Education
9 Undistributed

Functional Centres for Diagnostic and Therapeutic Services — Level 3
10 Clinical Laboratory
15 Medical Imaging
20 Radiation Oncology
•
•

Functional Centres for Clinical Laboratory — Level 4
•
•
25 Clinical Chemistry
30 Clinical Hematology
35 Transfusion Services
•
•

Functional Centres for Clinical Hematology — Level 5
20 Routine Hematology
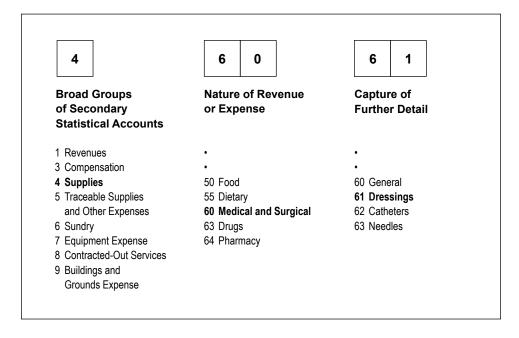40 Coagulation
60 Special Hematology (Non-Routine)

Secondary financial accounts

The secondary financial account provides additional information about the financial data reported in the primary accounts. The first digit identifies the financial broad group (e.g., compensation, supplies). The second segment defines the nature of the revenue or expense, and the third segment captures further detail. The unit of data reported in secondary financial accounts is dollars.

Figure 3 provides an example of the secondary financial account code that would be used to identify expenses related to the purchase of dressings (4 60 61). Accepted values for each of the account codes are included in the MIS Standards.

Figure 3   Structure of secondary financial account code

| 4 | | 6 | 0 | | 6 | 1 |

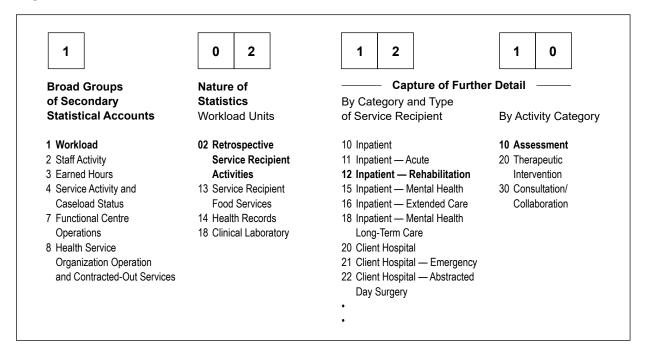| **Broad Groups of Secondary Statistical Accounts**	**Nature of Revenue or Expense**	**Capture of Further Detail**
1 Revenues	•	•
3 Compensation	•	•
4 Supplies	50 Food	60 General
5 Traceable Supplies and Other Expenses	55 Dietary	**61 Dressings**
	60 Medical and Surgical	62 Catheters
6 Sundry	63 Drugs	63 Needles
7 Equipment Expense	64 Pharmacy	
8 Contracted-Out Services		
9 Buildings and Grounds Expense		

Secondary statistical accounts

The secondary statistical account identifies the statistics that describe the activity associated with the primary accounts. The first segment identifies the statistical broad group (e.g., workload, staff activity). The second segment identifies the statistics reported (e.g., workload units, inpatient admissions), while the third and fourth segments capture further detail (e.g., category and type of service recipient, activity category). The unit of data reported in secondary statistical accounts is counts or volumes.

For certain statistics such as workload or any service activity statistics, the fourth and fifth digits can be used to capture the category and type of service recipient (e.g., inpatient — acute, client — home care). This can be very useful information for planning services.

Figure 4 shows an example of a secondary statistical account code where workload units are reported for services provided to an inpatient receiving an assessment of their rehabilitation needs (1 02 12 10). Accepted values for each of the account codes are included in the MIS Standards.

Figure 4   Structure of secondary statistical account code

1		0	2		1	2		1	0

Broad Groups of Secondary Statistical Accounts	**Nature of Statistics** Workload Units	——— **Capture of Further Detail** ——— By Category and Type of Service Recipient	By Activity Category
1 Workload	**02 Retrospective**	10 Inpatient	**10 Assessment**
2 Staff Activity	**Service Recipient**	11 Inpatient — Acute	20 Therapeutic
3 Earned Hours	**Activities**	**12 Inpatient — Rehabilitation**	Intervention
4 Service Activity and	13 Service Recipient	15 Inpatient — Mental Health	30 Consultation/
Caseload Status	Food Services	16 Inpatient — Extended Care	Collaboration
7 Functional Centre	14 Health Records	18 Inpatient — Mental Health	
Operations	18 Clinical Laboratory	Long-Term Care	
8 Health Service		20 Client Hospital	
Organization Operation		21 Client Hospital — Emergency	
and Contracted-Out Services		22 Client Hospital — Abstracted	
		Day Surgery	
		•	
		•	

For more details, see the MIS Standards (available through CIHI's [eStore](#), at no cost for our Core Plan[iv] subscribers). To find out whether your organization has already downloaded the MIS Standards or is a Core Plan subscriber, please email [help@cihi.ca](#).

Accounting principles and procedures

The MIS Standards is designed in accordance with generally accepted accounting principles; however, in certain areas, the MIS Standards provides more specific guidance than that provided in the *CPA Canada Public Sector Accounting Handbook*.

The accounting principles and procedures provide guidance in the measurement, classification and interpretation of data through the use of financial statements. They have been designed to meet the specific management information needs of both large and small health service organizations across Canada. As well, they provide a means of standardizing the classification of accounts and statistics within the health care field.

Data is submitted to CIHI after the financial books are closed after each fiscal year ends, typically by October. There is a longer time lag compared with the clinical data reported to CIHI databases, such as the [Discharge Abstract Database](#) (DAD) and [National Ambulatory Care Reporting System](#) (NACRS) as clinical data is typically submitted to CIHI more frequently.

CMDB organizations

Scope

The CMDB is designed to collect information on any health service organization using the MIS Standards or on organizations that can map their data to the MIS Standards. At this point, the population of reference includes all health service organizations reporting through the RHA/ministry of health in a province or territory. Data submission is voluntary except in those cases where the province or territory has mandated it.

Health service organizations that operate outside of an RHA are currently outside the scope of the population of reference of the CMDB. Examples include services or health service organizations operated by federal government departments (e.g., Corrections Canada, Indigenous Services Canada, Health Canada) or privately owned health service organizations (e.g., long-term care homes not funded through an RHA).

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iv. Core Plan subscribers include all health service organizations that report data to CIHI.

Provinces and territories

All provinces and territories submit data to the CMDB with the exception of Quebec and Nunavut. Quebec uses a financial standard entitled *Manuel de gestion financière* (MGF). CIHI, in collaboration with the ministère de la Santé et des Services sociaux (MSSS) in Quebec, has mapped the MGF to the MIS Standards so that Quebec hospital inpatient data can be used alongside data from other provinces and territories.

A representative from Quebec participates in the FSI Technical Working Group.

Note that expenses incurred to operate jurisdictional health ministries, including any health services provided directly by ministries, are not submitted to the CMDB. To better understand macro spending, see information about CIHI's [National Health Expenditure Database](#)[v] (NHEX).

Regional health authorities

In provinces and territories where health services are organized through RHAs, regional data is also submitted, providing a complete picture of health services for that RHA.

Hospitals

In the CMDB, a hospital is defined as an institution where patients are accommodated on the basis of medical need and are provided with continuing medical care and supporting diagnostic and therapeutic services, and which is licensed or approved as a hospital by a provincial or territorial government. This definition includes specialty hospitals, such as psychiatric, rehabilitation and convalescent hospitals.

Health service organizations other than hospitals

Organizations that provide services such as long-term care, community health, social services, home care and public health are referred to as non-hospital organizations in the CMDB. It is important to be aware that variation in the basket of services that are available through the RHAs and ministries of health in each jurisdiction results in some data gaps across the country.

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v. NHEX contains data on all health spending in Canada. Data is extracted from diverse documents that are publicly available. These include national and provincial/territorial public accounts and other financial reports, as well as documents from private insurance companies, AC Nielsen Canada and Statistics Canada.

Data flow in the CMDB

Health service organizations send their financial data to their provincial/territorial ministry, typically via their RHA. The ministries review the data to ensure that it is compatible with the MIS Standards, and meets the accounting principles and procedures put in place by their jurisdictions. This can take several months after the close of the fiscal year. The ministries may also need to transform and/or map the data to the national MIS Standards. Once these processes are complete, the data is submitted to CIHI. To allow jurisdictions sufficient time to prepare their data, CIHI's deadline for receipt of data is October 1 — 6 months following the close of the fiscal year.

Occasionally, data providers may wish to resubmit data to correct submitted records. The CMDB data year is never closed, and resubmissions can be accepted at any time if requested and the change is deemed material. CIHI's practice is to use the most recent data available when publishing results, as it is considered to be the most accurate. Once the data is published, CIHI will not normally restate values until the next publication cycle; therefore, data tables may sometimes vary from those published in previous years.

Analyzing CMDB data

Level of analysis

CMDB data can be analyzed at the facility, RHA (or zone) and provincial/territorial levels. When analyzing trends at the facility or RHA level, users should be aware that organizational changes (e.g., closures, mergers, splits) can affect the longitudinal comparability of information.

CMDB data can also be used to estimate hospitalization costs for patients or groups of patients. Using CIHI's Cost of a Standard Hospital Stay (CSHS) indicator in combination with clinical data, estimates can be calculated for specific groups of patients, which can then be aggregated as required. For more information, see the section below on [publicly reported information](#).

Trending CMDB data

Data from the CMDB can be trended over many years. When trending information over time, it is important to be aware of changes to provincial/territorial service delivery structures — in particular, if services were reorganized. Where CIHI is aware of a major change, it will be footnoted in any release of historical data.

CIHI's CSHS indicator and some other financial products also rely on clinical data that is grouped using CIHI's case-mix grouping methodologies. When using indicators that combine financial and clinical data, it is important to be aware of the data years of both data sources, as well as the [grouping methodology](#) used in the calculation. For more information, see the section below on [publicly reported information](#).

In some cases, CIHI is able to calculate forecasted estimates up to and including the most recent clinical data year. For those years where CMDB data is not yet available, CIHI has developed a methodology using Statistics Canada's Consumer Price Index to forecast future values. This methodology can be used only with the CSHS indicator. This methodology is used in the cost estimates found in CIHI's [Your Health System (YHS): Insight](#) web tool.

Physician payments

In Canadian jurisdictions, many physicians are paid directly by their provincial/territorial health insurance body. These payments are not included in the CMDB.

However, payments to physicians from a health service organization that reports to the CMDB are reported in CMDB data. These payments can include salary as well as other forms of physician compensation.

Given that the approach taken to compensate physicians varies significantly across jurisdictions, CIHI often excludes expenses related to physician compensation from indicators and reports.

Quality measures for CMDB throughout the information life cycle

This section provides information on the processes and standards CIHI uses to support data and information quality throughout the CMDB information life cycle (collection, submission, process, analysis and dissemination).

Data capture and collection

The way statistical and financial data is collected varies from one hospital to another and from one health region to another. The process begins with data captured by the finance team and others within the service organization. Ideally, the data capture and collection processes are automated; however, the process typically requires a combination of computer systems, manual data entry and extraction of data from a patient's chart. Statistical data is often captured from multiple hospital systems, including human resources management systems, payroll systems and admission–discharge–transfer (ADT) systems.

Regardless of how it is collected, data is entered into the statistical and financial general ledgers, which in turn generate the financial and statistical data based on the MIS Standards or the local standard. This data is then mapped to the national accounts (MIS Standards), compiled into submission files and submitted to either an RHA or ministry of health.[vi]

CIHI quality measures (data capture and collection)

CIHI takes measures to ensure quality control during the data capture phase of the CMDB information life cycle. These measures are intended to ensure that the data collected follows a common standard as well as to prevent data quality issues. They include the following:

- Encouraging data suppliers to use electronic data capture to collect financial information and use data from existing systems (e.g., payroll systems, ADT systems) to compile financial and statistical information. This allows users to "collect once, use many" and ensures consistent reporting and common understanding;

- Providing the flexibility in the MIS Standards for health service organizations to create more detailed accounts to meet local reporting needs;

- Ensuring that the MIS Standards reflects current practice by engaging with many advisory groups to update the standards on a regular basis;

[vi.] The jurisdictional ministry of health is the authority by which data is collected within each jurisdiction; it is the responsibility of the ministry of health to determine the scope of reporting to the CMDB and to ensure that data meets the MIS Standards and CMDB reporting requirements.

- Establishing the FSI Technical Working Group to support jurisdictions in the implementation and interpretation of the MIS Standards and to learn from each other;
- Providing education courses that address coding of expenses, revenues and statistics in accordance with the MIS Standards; and
- Responding to coding and standards interpretation questions from stakeholders.

Data submission

CIHI receives data from provincial and territorial ministries of health, except in a few cases. The data from Yukon is submitted by the Yukon Hospital Corporation. Quebec data is downloaded from a public provincial website and is mapped to the MIS Standards.

CIHI considers the province/territory/RHA that submits data to CIHI to be the data provider, although some of these health service organizations (with the exclusion of the Yukon Hospital Corporation) do not collect the data. After receiving the financial and statistical data, the RHA or ministry ensures that the data is compliant with the MIS Standards, performs mapping and transformations if required, and securely submits the data to CIHI once a year. The data files submitted to CIHI are prepared using data specifications developed and maintained at CIHI. The first timeline for submission to CIHI is October 1 of each year for the fiscal year ending March 31. Provinces and territories may choose to resubmit data to CIHI if data quality issues are identified. The data is normally available for analysis in January or February.

Jurisdictions create 4 separate files for submission to the CMDB: institution, primary account, secondary account and transaction files.

- The institution file contains the identification and contact information for all health service organizations that submit data, including the open and close date of each facility.
- The primary account file contains the primary account numbers or codes for the various balance sheet accounts, and functional and accounting centres being reported.
- The secondary account file contains the secondary financial and statistical accounts or codes in use to report workload, earned hours, compensation and other information to describe each financial transaction.
- The transaction file contains the financial and statistical data collected by the facilities at the transaction level. Each transaction has a primary account, a secondary financial account, a secondary statistical account and a quantity associated with it.

CIHI quality measures (data submission)

The quality measures taken during the data submission phase include the following:

- Providing CMDB data submission specifications annually to the data providers;
- Providing automated system checks and operational reports during the online submission process. The system automatically rejects any data with serious errors (e.g., data reported in accounts that are not defined);
- Allowing data providers to resubmit either their entire file or only the corrected records;
- Providing the preliminary data quality reports to the provincial and territorial data providers as a final step in the data submission process, and allowing a 2-month timeline to fix issues that require attention and resubmission;
- Responding to submission questions from data providers and actively reaching out during the data submission period to review data quality issues identified in previous years;
- Organizing regular meetings with data providers (FSI Technical Working Group members) during the data submission period to address any issues and identify potential delays in submission; and
- Attending and advising provincial/territorial data quality meetings throughout the year, as requested.

CMDB system checks

Immediately upon securely submitting data to the CMDB, detailed submission reports are provided to data providers that describe any issues related to their CMDB submission. These issues include technical errors, validation errors or data quality errors. Technical and validation errors will prevent the data from being entered into the CMDB. The deadline for resubmission of corrected data is December 1.

Technical errors occur when submissions don't meet the CMDB data submission specifications or when a submitted file contains duplicate records. Validation errors occur when there is a mismatch between the files detected. For example, there is a mismatch when the transaction file contains data reported in an account or a health service organization that has not been defined in one of the primary account, secondary account or institution files.

When a file is rejected, an operational report is sent to data providers to describe the reasons for rejection. The transaction file is loaded only when the institution, primary account and secondary account files are error-free.

On the other hand, records with missing information are accepted into the CMDB and flagged. Data providers are made aware of these missing data elements or records when they receive their preliminary data quality reports, and they may choose to correct and resubmit their data prior to the December 1 deadline.

CMDB provincial/territorial preliminary data quality reports

Shortly after a data submission is received at CIHI, a preliminary data quality report is prepared and sent to the data provider. The report provides results for data quality checks done on the submitted data, such as measuring compliance with the CMDB submission specifications for both financial and statistical accounts, ensuring that the trial balance balances at the provincial/territorial level and trending over 3 years. The report provides a deeper assessment of variables that will be used in annual reporting done by CIHI, such as the CSHS indicator and the Corporate Service Expense Ratio (CSER) indicator. Other data quality checks for the Interprovincial Health Insurance Agreement rates are also provided to the provinces.

Data processing

To prepare the data for analytical use at CIHI, various operations are performed, such as deriving data elements and flagging data quality issues that have not been addressed through resubmission. In addition, the following transformations are performed:

- Regional transaction expenses and revenues are distributed to facilities and other health service organizations within the RHAs to ensure comparability at the national level.
- Expenses and statistics reported in clearing accounts that were not cleared by the data submitters are redistributed to the absorbing functional centres based on the percentage of total expenses.[vii]

Analytical data cut

After the regional transaction funds are allocated and clearing accounts are cleared, an analytical data cut for the provinces and territories, excluding Quebec and Nunavut, is created. This becomes the single source of data to use for data requests and analyses. Quebec data that has been mapped to the MIS Standards is stored in a separate analytical file.

The analytical data cut is typically updated when resubmissions are received from provinces and territories. CIHI's practice is to use the most recent data cut available for data releases, occasionally resulting in a mismatch between data releases. The date of the data cut is provided along with releases to assist users in interpretation and to be able to correctly reproduce the results.

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vii. Clearing accounts are primary accounts used to track resources required to support multiple functional centres throughout a fiscal year. Expenses and statistics are distributed to absorbing functional centres periodically, typically at year end. For example, the Clinical Laboratory administration account is a clearing account, as the lab administration staff provide support to multiple clinical labs. Therefore their salaries and related expenses and statistics are reported in the Clinical Laboratory administration account until the end of the year, at which time they are distributed to the various clinical labs they support within the hospital.

CIHI quality measures (data processing)

Data quality measures taken during the data processing phase include the following:

- The analytical data cut undergoes a rigorous data quality check to ensure allocations have been done correctly.
- Key indicators are monitored over time in the analytical data cut to flag larger-than-expected fluctuations, which can be validated with the data provider, if required.

Data analysis and dissemination

CMDB data is disseminated in many ways, either through CIHI's various products or through custom data requests. Before CIHI releases any analytical outputs, they undergo thorough internal verification and approval processes, which include both checking the accuracy of the outputs and verifying adherence to CIHI's Privacy Policy.

Table 1   CMDB products

CIHI product	Brief description	Availability
Quick Stats	Static Excel tables that provide data on Beds Staffed and In Operation, by hospital and specific departments	Public
Patient Cost Estimator	An interactive tool that provides estimates of the average cost of hospital services nationally, by jurisdiction, clinical group (case mix) and patient age group	Public
Your Health System (YHS)	A series of interactive tools that provide results and comparisons for over 30 clinical and financial indicators (2 financial indicators [CSHS and CSER] and 2 contextual measures [occupancy rates and number of acute care beds]) Results are available at the hospital, regional and provincial levels.	YHS: In Brief — public YHS: In Depth — public YHS: Insight — authorized users only; login required
Hospital spending reports	An annual release that includes a series of tables and highlights, providing an in-depth look at hospital spending in each jurisdiction and Canada	Public
Functional Area Resource Intensity Weight Proportions (FARs)	Weights that can be used to further break down cost estimates for hospital services by functional area (using CIHI's case-mix tools) Can be found in CIHI's eStore under the "CMG+ Client Tables" product	Public

CIHI product	Brief description	Availability
Portal	Access to detailed pan-Canadian data, with the ability to undertake analyses and create custom reports Information on pricing and additional resources	Authorized users only; subscription based
CMDB eReports	Similar to Portal; users are able to drill down to the primary account level and create customized reports based on some preset indicators.	Data providers only; login required
Data request	Researchers, decision-makers and health managers can request specific data from one or more of CIHI's databases. Information and request form	Clients charged at a rate based on cost recovery for time spent

Resources to support data capture, collection and use

CIHI has a series of educational products available to stakeholders to support their understanding of the MIS Standards, CMDB data and related products.

Log in to CIHI's Learning Centre to find the full list of CIHI offerings. Educational products are available at no cost to Core Plan subscribers.[viii]

CMDB publicly reported information

Several key indicators and products are produced on an annual basis using CMDB data. They are used by health system stakeholders to support planning and decision-making.

Corporate Services Expense Ratio

Formerly known as the Administrative Expense Ratio, the Corporate Services Expense Ratio (CSER) measures the percentage of the legal entity's total expenses that were spent in administrative departments (e.g., administration, finance, human resources, communication).

Indicator results are publicly available in YHS: In Depth. To learn more about the indicator methodology and reporting levels, please visit CIHI's indicator library web pages and search for CSER.

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viii. Core Plan subscribers include all health service organizations that report data to CIHI.

Cost of a Standard Hospital Stay

The Cost of a Standard Hospital Stay (CSHS) indicator provides an estimate of the cost to provide inpatient services. This indicator is unique in that it uses information from both the CMDB and the DAD, which holds information about inpatient stays from hospitals across Canada. It is often used to respond to data requests for information on cost estimates for a specific group of patients, as defined by clinical characteristics. The CSHS is calculated at different levels — hospital, provincial, regional and national — with the provincial or territorial level being the most frequently used.

To calculate a hospital's CSHS, the hospital's total inpatient cost is divided by the hospital's total Resource Intensity Weight (RIW) as follows:

$$\text{CSHS}_{\text{(hospital)}} = \text{total hospital Inpatient costs} \div \text{total hospital RIW}$$

The CSHS therefore describes the average cost of each hospital to treat an average patient with an RIW of 1.0. The RIW represents the relative resources used by a patient during their hospital stay, providing a weighting of the resource intensity use of that patient stay relative to the average patient.

This allows us to estimate the cost of any case by multiplying the hospital-level CSHS indicator result by the patient encounter RIW (resource indicator developed from Case Mix Group+ [CMG+] methodology for inpatient cases and Comprehensive Ambulatory Classification System [CACS] for ambulatory cases):

$$\text{Cost estimate}_{\text{(individual case)}} = \text{CSHS}_{\text{(hospital)}} \times \text{RIW}_{\text{(individual case)}}$$

It is important to note that the cost estimates obtained would be for the patient's entire stay at the hospital and not specific to any procedure. In addition, the cost estimate excludes physician costs.

This methodology is also used in the Patient Cost Estimator and other CIHI products.

CSHS indicator results are publicly available in YHS: In Depth. To learn more about the indicator methodology, please visit CIHI's indicator library web pages and search for CSHS.

You can also review CIHI's education offerings or email fsi@cihi.ca for details about the CSHS × RIW methodology and available years.

Beds Staffed and In Operation Table

The Beds Staffed and In Operation (BSIO) table presents the beds and cribs available and staffed to provide hospital services to inpatients/residents. This information is reported annually in CIHI's [Quick Stats](#) and can be found by filtering on "CMDB." A 10-year trend can be found in the 2022 release of the [Hospital spending report](#).

For more information about the BSIO, please email fsi@cihi.ca.

Functional Area Resource Intensity Weight Proportions

The Functional Area RIW proportions (FARs) are used to determine the proportion of resources used by functional areas (grouping of similar functional centres) and clinical group, either by [CMG+ methodology](#) for inpatient cases or [CACS](#) for ambulatory cases. FAR tables provide users with the ability to further break down CSHS cost estimates. The tables can be found in CIHI's [eStore](#) under the "CMG+ Client Tables" product.

For more information about FARs, please email fsi@cihi.ca.

MIS Standards data elements used in CIHI clinical databases

2 of CIHI's key hospital-based clinical databases, the DAD and NACRS, also collect the functional centre code for each clinical record, in accordance with the MIS Standards.

The MIS functional centre codes or accounts in the CMDB and the DAD/NACRS are based on the MIS Standards and have the same definitions. For example, the MIS functional centre account 71 3 10 (Ambulatory Care Services — Emergency) is the same in both NACRS and the CMDB for reporting ambulatory care services provided in an emergency department.

However, differences do exist in the type of information that is collected in these databases and how the information is used. While the CMDB collects the level of activity (e.g., volume), the DAD/NACRS collect more detailed information about each activity (e.g., arrival time, date of visit, intervention code, diagnosis code). Including the MIS Standards functional centre (primary code) on the clinical record provides a health organization with additional means to understand and validate the relationship between their clinical and financial information.

For more information on how the MIS functional centre code is reported in the DAD or NACRS, please email cad@cihi.ca.

A glimpse into CMDB data

Organization counts

In the CMDB, a health service organization is deemed to be a hospital or a non-hospital based on the jurisdiction's determination.

Table 2   Number of hospitals reported in the CMDB, 2017–2018 to 2021–2022

Province/territory	2017–2018	2018–2019	2019–2020	2020–2021	2021–2022
Newfoundland and Labrador	34	34	34	34	34
Prince Edward Island	7	7	7	7	7
Nova Scotia	37	37	37	37	37
New Brunswick	25	25	25	25	25
Ontario	147	144	143	143	141
Manitoba	72	72	72	72	72
Saskatchewan	62	62	62	62	62
Alberta	109	108	108	102	102
British Columbia	99	99	93	91	90
Yukon	3	3	3	3	3
Northwest Territories	4	4	4	4	4
Total	**598**	**595**	**588**	**580**	**577**

Table 3 Number of health service organizations other than hospitals reported in the CMDB, 2017–2018 to 2021–2022

Province/territory	2017–2018	2018–2019	2019–2020	2020–2021	2021–2022
Newfoundland and Labrador	60	59	56	57	57
Prince Edward Island	58	90	93	101	103
Nova Scotia	3	3	3	3	3
New Brunswick	99	100	100	102	102
Ontario	713	711	652	646	631
Manitoba	90	92	92	92	91
Saskatchewan	517	535	541	564	565
Alberta	236	247	246	252	256
British Columbia	177	194	214	223	276
Yukon	0	0	0	0	0
Northwest Territories	4	4	4	4	4
Total	**1,908**	**2,036**	**2,002**	**2,044**	**2,088**

Additional resources

- CMDB metadata
- MIS Standards
- Data and Information Quality Program
- Data request forms

Appendix

Text alternative for figures

Text alternative for Figure 1

Figure 1 shows the relationship between the organization and the primary account and between the primary account and each of the secondary financial account and the secondary statistical account.

Text alternative for Figure 2

Figure 2 describes the design of the primary code, from left to right, using the example of primary code 71 4 10 30 20. This primary code is used to identify the routine hematology laboratory functional centre at reporting level 5; this code is used to report expenses, revenues and statistics related to all activities that take place in this lab.

The first digit of the primary code identifies the account type. In this example, the first digit is 7, which indicates a functional centre. The second digit identifies the fund type. In this example, the second digit is 1, which indicates the Operating fund.

Reporting level 2 consists of 1 digit identifying the functional centre framework. In this example, it's a 4, which indicates the Diagnostic and Therapeutic Services framework.

Reporting levels 3, 4 and 5 consist of 2 digits each and describe the functional centre in increasing level of detail. Reporting level 3 in this example is 10, which is Clinical Laboratory. The functional centre code at level 4 is specified as 30, which is Clinical Hematology Laboratory, and level 5 is further specified as 20, which is Routine Hematology.

The accepted values for account types (first digit) are as follows:

- 1 Current Assets
- 3 Non-Current Assets
- 4 Current Liabilities and Deferred Contributions
- 5 Long-Term Liabilities and Deferred Contributions
- 6 Net Assets/Fund Balances
- 7 Functional Centres for Revenue, Expense and Statistics
- 8 Accounting Centres for Revenue, Expense and Statistics

The accepted values for fund type (second digit) are as follows:

- 1 Operating
- 4 Board Designated
- 5 Capital
- 6 Special Purpose
- 8 Endowment — Revenue Unrestricted
- 9 Endowment — Revenue Restricted

The accepted values for functional centre framework (third digit) are as follows:

- 1 Administrative and Support Services
- 2 Nursing Inpatient Services
- 3 Ambulatory Care Services
- 4 Diagnostic and Therapeutic Services
- 5 Community Health Services
- 7 Research
- 8 Education
- 9 Undistributed

Examples of accepted values for functional centres within the Diagnostic and Therapeutic Services framework, level 3 (fourth and fifth digits), are as follows:

- 10 Clinical Laboratory
- 15 Medical Imaging
- 20 Radiation Oncology

Examples of accepted values for functional centres within the Clinical Laboratory, level 4 (sixth and seventh digits), are as follows:

- 25 Clinical Chemistry
- 30 Clinical Hematology
- 35 Transfusion Services

The accepted values for functional centres within the Clinical Hematology functional centre, level 5 (eighth and ninth digits), are as follows:

- 20 Routine Hematology
- 40 Coagulation
- 60 Special Hematology (Non-Routine)

Text alternative for Figure 3

Figure 3 describes the design of the secondary financial code, using an example of the secondary financial account code that is used to describe expenses related to the purchase of dressings (4 60 61). The code consists of 5 digits, in 3 groups.

The first digit identifies the broad group of secondary financial accounts. Accepted values are as follows:

- 1 Revenues
- 3 Compensation
- 4 Supplies
- 5 Traceable Supplies and Other Expenses
- 6 Sundry
- 7 Equipment Expense
- 8 Contracted-Out Services
- 9 Buildings and Grounds Expense

The second and third digits describe the nature of the revenue or expense. Examples of accepted values for the nature of a revenue or expense in the broad group 4 Supplies are as follows:

- 50 Food
- 55 Dietary
- 60 Medical and Surgical
- 63 Drugs
- 64 Pharmacy

The fourth and fifth digits provide additional detail about the nature of the revenue or expense. Examples of accepted values for further details describing the 60 Medical and Surgical expenses under the broad group 4 Supplies are as follows:

- 60 General
- 61 Dressings
- 62 Catheters
- 63 Needles

Text alternative for Figure 4

Figure 4 describes the design of the secondary statistical account code, using an example of the secondary statistical account code where workload units are reported for services provided to an inpatient receiving an assessment of their rehabilitation needs (1 02 12 10).

The secondary statistical code consists of 7 digits grouped into 4 groups.

The first digit identifies the broad group of secondary statistical accounts. Accepted values are as follows:

- 1 Workload
- 2 Staff Activity
- 3 Earned Hours
- 4 Service Activity and Caseload Status
- 7 Functional Centre Operations
- 8 Health Service Organization Operation and Contracted-Out Services

The second and third digits identify the nature of the statistic. Examples of accepted values related to the broad group 1 Workload are as follows:

- 02 Retrospective Service Recipient Activities
- 13 Service Recipient Food Services
- 14 Health Records
- 18 Clinical Laboratory

The fourth and fifth digits identify the category and type of service recipient. Examples of accepted values are as follows:

- 10 Inpatient
- 11 Inpatient — Acute
- 12 Inpatient — Rehabilitation
- 15 Inpatient — Mental Health
- 16 Inpatient — Extended Care
- 18 Inpatient — Mental Health Long-Term Care
- 20 Client Hospital
- 21 Client Hospital — Emergency
- 22 Client Hospital — Abstracted Day Surgery

The sixth and seventh digits provide further detail related to the activity provided. Accepted values for 12 Inpatient — Rehabilitation are as follows:

- 10 Assessment
- 20 Therapeutic Intervention
- 30 Consultation/Collaboration