
for Health

Table of contents

Summary

This guide provides context and information, including an assessment of data quality as defined by CIHI's Information Quality Framework, to facilitate the understanding and use of hospital-based and residential continuing care/long-term care data submitted to the Canadian Institute for Health Information (CIHI).

This data is collected via CIHI's Continuing Care Reporting System (CCRS) and the Integrated interRAI Reporting System (IRRS) module for the interRAI Long-Term Care Facilities (LTCF) © instrument, which is a newer version of the long-term care data standard used by CCRS. This IRRS-LTCF module was developed to eventually replace CCRS, and several jurisdictions across Canada are in the process of transitioning from CCRS to IRRS.

CCRS and IRRS-LTCF capture longitudinal demographic, clinical and functional information on residents who receive continuing care services in hospital-based facilities and long-term care homes in Canada that have 24-hour nursing available. Both databases include administrative information about residents and their stays, as well as information derived from clinical assessments.

The clinical standard for CCRS is the Resident

- In 2021–2022, Canada (excluding Quebec) had 1,630 long-term care homes where health care was either entirely or partially funded by the provincial or territorial government. Of these, 1,401 reported to CCRS or IRRS-LTCF in 2022–2023.
- Given that the CCRS/IRRS-LTCF populations of reference[ii] do not currently contain all provinces and territories (or all providers in submitting provinces and territories) that make up the population of interest, caution should be used when interpreting results, as the data may not be representative of all continuing care facilities in Canada.
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Introduction

Data and information quality at CIHI

Quality is at the heart of everything CIHI does. It is embedded in our mandate and 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 CIHI's information life cycle, quality dimensions and quality principles, please visit the data and information quality section of our website.

CIHI produces data quality reports to assess the contribution of each province and territory to a number of CIHI's databases (including CCRS and IRRS) and to inform on data advancement in key areas. These reports are shared with deputy ministers of health and key jurisdictional representatives across the country.

Introduction to continuing care

Overview of continuing care

Continuing care includes long-term care (e.g., nursing or personal care homes) and hospital-based continuing care for people who require on-site delivery of supervised care, with nursing care provided 24 hours a day, 7 days a week.

jurisdictions, where home care and other community support services are available, many people who would have otherwise been admitted to a long-term care home are now served at home or in other settings.

There is also variation in how long-term care homes are governed and who owns them. Of the total 2,076 Canadian long-term care homes as of March 31, 2021, 54% are privately owned and 46% are publicly owned.[1]

Long-term care homes can submit data to CCRS or IRRS-LTCF if they provide 24-hour nursing care and have implemented the RAI-MDS 2.0 (CCRS) or interRAI LTCF (IRRS) clinical standard.

Hospital-based continuing care serves individuals who may not be ready for discharge from hospital but who no longer need acute care services. Also known as extended care, chronic care or complex continuing care, it provides ongoing professional services to a diverse population with complex health needs.

Hospital-based continuing care facilities/units submit to CCRS only if they have implemented the CCRS clinical standard (RAI-MDS 2.0). This currently includes Ontario complex continuing care facilities and 2 Winnipeg Regional Health Authority hospitals. Other continuing care hospitals and units submit data to CIHI's Discharge Abstract Database. Hospital-based continuing care data is not submitted to IRRS-LTCF.

Introduction to CCRS and IRRS-LTCF

Overview

CCRS was launched in 2003–2004. Using the RAI-MDS 2.0 assessment instrument, the database captures longitudinal demographic, clinical and functional information on residents who receive continuing care services in hospital-based facilities and long-term care homes in Canada that are publicly funded and have 24-hour nursing available. Participating organizations also provide administrative information collected when the resident enters and leaves the hospital/long-term care home, plus information on hospital/long-term care home characteristics to support comparative reporting.

IRRS-LTCF was launched in 2019–2020. It captures similar information as CCRS but uses an updated clinical assessment instrument (interRAI LTCF). Several jurisdictions across Canada are in the process of transitioning from CCRS to IRRS.

CCRS receives data collected with the RAI-MDS 2.0 assessment. IRRS-LTCF receives data collected with the interRAI LTCF assessment, which is an updated, streamlined version of the RAI-MDS 2.0. Both are validated clinical assessments developed by interRAI, a collaborative network of researchers in more than 30 countries committed to improving care for persons who have disabilities or are medically complex. Both have been modified for use in Canada by CIHI, with permission from interRAI.

The RAI-MDS 2.0 and interRAI LTCF are both comprehensive assessments used to identify the preferences, needs and strengths of residents of long-term care homes (and, in the case of the RAI-MDS 2.0, patients in continuing care hospitals) and provide a snapshot of the services received. They include measures of cognition, communication, vision, mood and behaviour, psychosocial well-being, physical functioning, continence, disease diagnoses, nutritional status, skin condition, medications, and special treatments and procedures.

The information, which is gathered electronically at the point of care, provides real-time decision support for front-line care planning and monitoring. The data from individual residents can be aggregated and used by clinical quality champions, managers and policy-makers for planning, quality improvement and accountability.

Data collected using the 2 clinical standards may not be directly comparable. Recommendations on how to map and compare data collected via the RAI-MDS 2.0 and interRAI LTCF are available in the *Long-Term Care Assessment Mapping: RAI-MDS 2.0 and interRAI LTCF Comparison Document*, part of the IRRS reference materials that can be found in CIHI's eStore. This resource may be useful to data users looking to trend or compare data collected

A shorter quarterly RAI-MDS 2.0 assessment (record type QA) should be completed every quarter (at 3, 6 and 9 months) between full assessments. When using RAI-MDS 2.0 assessment data, users should be aware that not all data elements will be available for the quarterly assessments.

A discharge record is completed whenever a resident is discharged from a continuing care facility (including death). A discharge record may also be completed when the discharge is temporary (i.e., when the resident's return is anticipated).

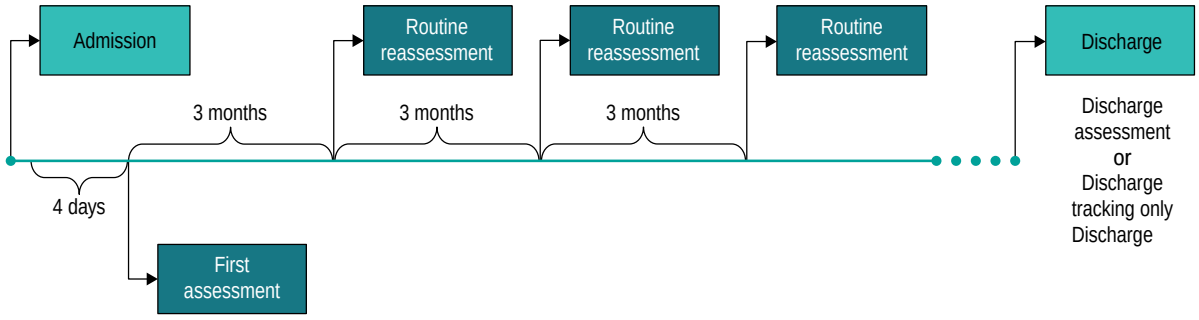
If a resident is discharged but returns to the same continuing care facility before the next scheduled assessment, the previous assessment cycle can continue under the same URI. If

In IRRS-LTCF, all assessments except one are considered full assessments because they contain essentially the same items, aside from the following variations:

- The Intake History section is completed only on a first assessment; and
- The Discharge section is completed only on a discharge assessment.

The exception is a discharge tracking only assessment. This includes a minimal amount of administrative data that facilities may use to close an open encounter instead of a full discharge assessment.

Typical IRRS-LTCF episode



Submission organizations submit data to CIHI. In some jurisdictions, source organizations will submit their own data to CIHI and therefore will act as both source and submission organizations. In other jurisdictions, source organizations will send their data to another organization (e.g., their provincial ministry of health), which will then submit the data to CIHI.

Overview of CIHI data tables

CCRS data is grouped into 4 key data tables: Organization, Episode, Assessment and Medication. IRRS-LTCF data is grouped into 5 key data tables: Organization, Encounter, Assessment, Medication and Disease Diagnoses. For both databases, additional tables contain information on resource utilization and quality indicators.

Organization data includes general information about facilities/hospitals delivering continuing care services, including the type of organization and basic name and address elements. Data is submitted at the facility/hospital level and can be rolled up to health region/zone, province/territory and national levels.

Episode/encounter data includes identifers, demographic information and administrative data such as referral and discharge information. This data can be collected on all continuing care residents regardless of whether they receive an assessment.

Assessment data is captured during the resident’s stay, typically at admission and on a quarterly basis thereafter until discharge. It includes information about a resident’s functioning, needs, strengths and preferences.Dat5and p8e1ostrengths and preferences.FSl1 0 0 11 72 431.0

Coverage and participation

Data coverage speaks to the extent to which each jurisdiction participates in, and is therefore reflected in, the database. Some jurisdictions will participate fully, some partially and some not at all.

The CCRS/IRRS-LTCF population of interest, the group of units for which information is wanted, is defined as all residents of all publicly funded continuing care facilities (primarily long-term care homes, but also hospital-based facilities for CCRS) in Canada that have 24-hour nursing available.

The CCRS/IRRS-LTCF population of reference, the group of units for which information should be available, is defined as all publicly funded continuing care facilities in Canada with 24-hour nursing from which data submissions to CCRS or IRRS-LTCF can be expected.

The population of reference has changed over time, and participation varies by

Quality measures for CCRS/IRRS-LTCF throughout the information life cycle

This section provides information on the processes and standards CIHI uses to support data quality and information quality throughout the CCRS/IRRS-LTCF information life cycle: capture, submit, process, analyze and disseminate.

Capture

The process begins with data (assessment, demographic and administrative) collected electronically by front-line clinicians and stored in a vendor software system. The RAI-MDS 2.0 or interRAI LTCF is implemented in jurisdictions primarily as a comprehensive assessment for front-line clinicians to help plan and monitor resident care. The data submitted to CCRS or IRRS-LTCF is, therefore, a by-product of the ongoing processes of care.

The CCRS and IRRS-LTCF data sets consist of both clinical assessment data elements and those required by CIHI for administrative purposes; this amounts to more than 400 items for the RAI-MDS 2.0 and more than 300 for the interRAI LTCF. In both cases, the vast majority of data elements are mandatory to submit, including all the elements that are used to derive the key outputs (outcome scales, CAPs, quality indicators and the case-mix systems).

In long-term care, most assessments are completed by nurses; sometimes they are completed by occupational therapists, physiotherapists and/or social workers. Some organizations have super users whose sole responsibility is to conduct interRAI assessments, while other sites have an interdisciplinary team that completes assessments.

CIHI takes measures to ensure quality control during the data capture phase of the CCRS and IRRS-LTCF information life cycle. These are intended to ensure standardized data collection and to prevent data quality issues. They include

- Providing data element definitions and data collection standards such as user manuals and job aids;
- Encouraging data suppliers to use electronic data capture to complete assessments and requiring them to use licensed vendors, preferably those that implement edits and audits at data capture that allow corrections and verifications to occur at the time of data entry;
- Providing education courses that address coding of RAI-MDS64799682 Tm(16)TjETEMCq0 TL/Fm0 Do1c

CIHI takes measures to ensure quality control during the CCRS/IRRS-LTCF data submission phase of the information life cycle. These are aimed at preventing, monitoring and controlling data quality issues and include

- Producing user manuals and specifications documents that provide information on how the data is to be submitted to CIHI, including data element specifications, valid code values, record layouts, data validation rules and error message descriptions. Documentation is reviewed annually, and changes are made available to clients prior to the beginning of each fiscal year;
- Requiring data providers to use licensed software vendors that incorporate CIHI's submission specifications into their proprietary software systems;
- Requiring all software vendors to pass CIHI's testing requirements to ensure compliance with the most recent CIHI specifications;
- Checking each data element upon submission to ensure completeness and valid values. Data not meeting these specifications is either rejected (hard edit) or accepted with a warning message (soft edit), and data providers are given information about the reasons for the rejection. Correcting and resubmitting rejected records is the responsibility of the organizations collecting and submitting the data;
- Producing quarterly data quality audit reports that identify potentially missing records and illogical or suspicious values in successfully submitted data; and
- Providing direct client support by email (specializedcare@cihi.ca) to assist with submitting data, interpreting submission reports and correcting rejected records.

CIHI has developed the following manuals to support data submission. They are available by logging in to CIHI's website and visiting eStore.

- *Continuing Care Reporting System (CCRS) Data Submission User Manual*

- *Integrated interRAI Reporting System (IRRS) Reference Manual*
- *IRRS Mandatory Element Matrix*

In addition to the manuals above, CIHI's Education Program includes a suite of courses relating to long-term care, including data submission. The course catalogue and the courses are available by logging in to CIHI's Learning Centre.

60 days following the end of a quarter, a cut of the transformed CCRS data is produced to

Data users should be aware of the different ways of counting CCR

Disseminate

The table below summarizes the ways CIHI disseminates CCRS/IRRS-LTCF data.

CCRS/IRRS-LTCF reporting outputs

	Standard tables of aggregate data at the province/territory level for a given year, therefore reflecting only 1 point in time. Contain administrative, clinical, resource utilization and quality indicator information. Include data for only the jurisdictions that submitted data for the given fiscal year. As of the publication of *Profile of Residents in Residential and Hospital-Based Continuing Care, 2022–2023*, tables include		

Number of long-term care homes and continuing care hospitals submitting data to CCRS and IRRS-LTCF over number of long-term care homes suitable for participation,* by province/territory and year

Facility-based long-term care						
	CCRS	35/36	35/36	36/38	36/38	38/38
	—	—	—	0/19	0/19	0/19
	CCRS	0/93	1/93	1/84	1/84	1/84
	IRRS-LTCF	0/93	0/93	0/84	0/84	56/84
	CCRS	0/68	0/69	0/70	0/71	0/71
	IRRS-LTCF	1/68	52/69	70/70	69/71	71/71
	—	—	—	—	—	—
	CCRS	626/626	623/624	620/627	622/629	628/629
	CCRS	39/125	39/125	38/125	38/124	38/124
	CCRS	140/156	137/156§	1/161	0/161	0/161
	IRRS-LTCF	0/156	0/156	156/161	156/161	157/161
	CCRS	177/177	180/180	181/186	179/179	174/179
	CCRS	297/309	299/313	299/299	300/309	295/309
	CCRS	5/5	5/5	4/4	4/4	4/4
	—	—	—	0/9	0/9	0/9
	—	—	—	0/3	0/3	0/3
Hospital-based continuing care						
	CCRS	103/115	100/116	100/116	99/117	96/117
	CCRS	2/2	2/2	2/2	2/2	2/2

* *Number suitable for participation* is the total number of long-term care homes/hospitals that were suitable for participation in CCRS or IRRS-LTCF in each fscal year. It is sourced through direct contact with the individual ministries of health and/or

Hospital-based continuing care			
	1996–1997 to current	—	Ontario complex continuing care (CCC) facilities began completing RAI-MDS 2.0 assessments in 1996–1997 and began submitting to CCRS when it was created in 2003–2004. Small Ontario CCC facilities sometimes do not submit to CCRS in a given year, as they do not have any residents in their designated CCC beds.
	2008–2009 to current	—	Manitoba has partial commitment to participate, with full participation from WRHA only.

* Years of data coverage are based on the years for which a substantive number of assessment records (50 or more) are

The Residents Without a Full Assessment indicator measures the percentage of residents (based on URI) who had data submitted in the reporting fscal year who were expected to have at least one full assessment submitted but for whom no full assessments were received. Residents who were discharged before the organization started submitting to CCRS, were discharged within 14 days of being admitted or were admitted within 14 days of March 31 of the reporting year are excluded from this indicator, as they were not expected to be assessed.

The optimal value is 0%. It is assumed for the purposes of this indicator that the expected full assessment records are not in the database for 1 of 3 reasons: they were never completed, they were completed but not submitted to CIHI or they were rejected and never resubmitted.

This indicator relates to the capture and submit stages of the data life cycle and the quality dimension accuracy and reliability.

This indicator is relevant only for clients receiving RAI-MDS 2.0 assessments that are submitted to CCRS — residents are assessed quarterly with a reduced number of items but are also expected to receive a full assessment each year. Assessments that use the interRAI LTCF instrument and are submitted to IRRS all contain the same items (i.e., all are full assessments except the discharge tracking assessments).

CCRS residents without a full assessment, by province/territory and year (%)

Facility-based care					
	CCRS	0.8	0.8	0.9	0.3
	CCRS	17.1	13.6	10.1	18.2
	IRRS-LTCF	—	—	—	*
	CCRS	—	—	—	—
	IRRS-LTCF	*	*	*	*
	CCRS	0.1	0.0	0.1	0.0
	CCRS	1.5	1.2	1.2	0.3
	CCRS	2.5[†]	6.0	—	—
	IRRS-LTCF	*	*	*	*
	CCRS	0.6	0.3	0.4	0.3
	CCRS	1.9	1.7	2.1	1.0
	CCRS	20.5	22.6	32.3	8.0

Hospital-based care					
	CCRS	0.2	0.4	0.4	0.2
	CCRS	0.5	1.5	2.1	0.0

* This indicator is relevant only for clients receiving RAI-MDS 2.0 assessments that are submitted to CCRS — residents are assessed quarterly with a reduced number of items and are expected to receive a full assessment each year. Assessments that use the interRAI LTCF instrument and are submitted to IRRS all contain the same

CCRS/IRRS-LTCF record-level late submissions, by province/territory and year (%)

Facility-based care						
	CCRS	1.1	0.3	0.8	1	0.3
	CCRS	1.0	4.1	22.6	—	15.2
	IRRS-LTCF	n/a	n/a	n/a	n/a	*
	CCRS	n/a	n/a	n/a	n/a	n/a
	IRRS-LTCF	—	—	*	1.3	3.3
	CCRS	0.4	1.7	1.7	1.4	1.5
	CCRS	1.1	1.7	1.3	2.3	1.8
	CCRS	4.8	0.5†	1.6	n/a	n/a
	IRRS-LTCF	n/a	n/a	*	*	0.7
	CCRS	0.6	0.9	1.8		

Reference

1. Canadian Institute for Health Information. Long-term care homes in Canada: How many and who owns them?. Accessed July 26, 2023.

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