



for Health Inf

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Summary

This guide provides context and information to guide the understanding and use of data from the Continuing Care Reporting System (CCRS) at the Canadian Institute for Health Quality Framework.

CCRS 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 have 24-hour nursing available.

The database includes administrative information about residents and their stays, as well as information derived from clinical assessments. The clinical standard for CCRS is the Resident Assessment Instrument–Minimum Data Set (RAI-MDS 2.0 ©). It is a validated clinical assessment developed by interRAI, an international research network. The RAI-MDS 2.0 has

The information collected using the clinical standard supports care planning and monitoring at the point of care. In addition, once data is submitted to CIHI, it is made available across Canada for program planning, improving the quality of care, allocating resources and understanding population needs.

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

- The admission criteria for long-term care and the services provided vary across the country. Depending on a number of factors, including the availability of other services such as home care and assisted-living settings to keep people living in the community, jurisdictions tailor their admission criteria and service provision for long-term care toward the local needs of their populations.
- The population of interestⁱ for CCRS is all residents of all publicly funded continuing care

- CCRS contains data from full RAI-MDS 2.0 assessments (completed within 14 days of change in clinical status) and shorter quarterly RAI-MDS 2.0 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.
- CCRS does not contain assessment information about all residents, primarily because some stay in the continuing care facility for less than 14 days. For lengths of stay less than 14 days, completing an assessment is voluntary; thus only demographic and administrative data is available for these residents.
- The structure of CCRS longitudinal data is complex. There are more than 500 data elements, consisting of RAI-MDS 2.0 data elements plus data elements developed by CIHI. The supporting documentation will help with understanding and interpretation (CCRS Data Submission User Manual).

Please email ccrs@cihi.ca with any feedback or questions.

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.

Information Quality Framework

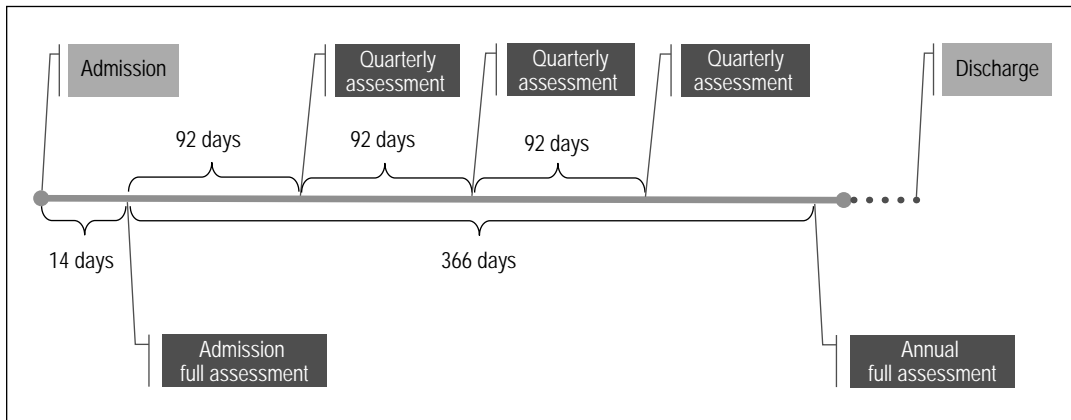
CIHI's Information Quality Framework provides an overarching structure for all of our quality management practices related to capturing and processing data and transforming it into information products.

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](#).

Provincial/territorial data quality reports

CIHI produces annual data quality reports to assess the contribution of each province and territory to 12 of CIHI's databases (including CCRS) 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.

Figure Typical CCRS episode



The next-generation clinical assessment instrument for long-term care is the interRAI Long-Term Care Facilities (interRAI LTCF ©). CIHI has built a new integrated reporting system to support this and other interRAI assessment instruments. This new system and the interRAI LTCF are outside the scope of this guide.

Outputs

The RAI-MDS 2.0 has embedded decision-support algorithms. These algorithms summarize information from the assessment and can be used to support both clinical and organizational decision-making. The algorithms include outcome scales, Clinical Assessment Protocols (CAPs), quality indicators and the case-mix systems.

clinical domain for a person, such as cognitive performance, physical functioning, depression symptoms and pain.

Person-level CAPs provide evidence-informed guidance for further assessment and intervention in areas where there is risk of decline or potential to improve (e.g., activities of daily living).

Record types

CIHI quality measures

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

- 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 [C2CCRS](#)



Job aids

CIHI has developed a number of job aids to support data capture (coding) that are available on [CIHI's website](#). Examples include the following:

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Submit

CCRS submission

CIHI can receive CCRS data from provincial/territorial ministries, regional health authorities and continuing care providers (submitting organizations).

CIHI quality measures

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

- Producing the *CCRS Data Submission User Manual*

Education courses

CIHI's Learning and Development Program includes a suite of education courses relating to continuing care and the RAI-MDS 2.0. A course relating to data submission is 568E — Submitting CCRS Data (eLearning). The course catalogue and the courses are available by logging in to [CIHI's Learning Centre](#).

System edits

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Duplicate records



Process

Processing CCRS data

CCRS data goes through robust, automated data quality processing in CIHI's IT environment. To prepare the data for analytical use, various data operations are performed, such as deriving a repository known as the Analytical Source of Truth.

De-identification

CIHI receives a complete health card number (HCN) on almost all CCRS records and applies a standard algorithm to encrypt this number, even if it has already been encrypted by the submitter. This standard encryption methodology is applied to all CIHI data holdings. As a result, CCRS data can be linked with other CIHI data (e.g., home care clinical assessments, hospital admissions).

Data cuts

60 days following the end of a quarter, a cut of the transformed CCRS data is produced to create a deadline, it is not incorporated into that quarter's reporting. Late submissions are included in subsequent updates.

Annual reports are produced using Quarter 4 data; as such, late submissions of Quarter 4 data are not included in the annual report for that year.

Data quality flags

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Depending on the vendor systems available to clients, 1 of 2 things can happen following an organizational change:

- Organizations discharge all their active residents from the old organization number and admit them under the new organization number. This breaks the longitudinal record of the



Counting residents

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Table 1 CCRS counting variations

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CCRS data

The following section presents data relating to CCRS participation, resident counts and data quality indicators.

Participation

2018–2019 participation

The table below presents CCRS participation by province/territory for 2018–2019.

Data quality indicators

This section of the guide presents results for 4 data quality indicators. For further information relating to the indicator methodology, please see the [_____](#)

Residents Without a Full Assessment

The Residents Without a Full Assessment indicator measures the percentage of URIs that have a full assessment submitted but for whom no full assessments were received. Residents who either 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

Late Submissions: Record Level

The Late Submissions: Record Level indicator is a measure of the timeliness of the province's/territory's data submission to CCRS. It calculates the percentage of records for a given year that are submitted after the Quarter 4 deadline.^{ix} The optimal value is 0%.

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

Table 9 CCRS record-level late submissions, by province/territory and year (%)

Province/territory	2013–2014	2014–2015	2015–2016	2016–2017	2017–2018	2018–2019
N.L. (L)	0.1	1.2	0.1	2.9	0.1	1.1
N.S. (L)	1.9	1.0	0.0	16.3	1.9	1.0
N.B. (L)	—	0.1	0.0	0.0	†	†
Ont. (H)	0.5	0.6	1.6	0.5	0.5	0.6
Ont. (L)	0.5	0.4	0.3	0.3	0.5	0.4
Man. (H)	0.6	1.5	0.6	0.2	0.6	1.5
Man. (L)	1.3	0.9	1.0	1.5	1.3	1.1
Sask. (L)	—	4.6	0.7	2.3	30.2	4.8
Alta. (L)	—	0.4	0.4	0.3	7.3	0.6
B.C. (L)	3.1	1.5	1.5	1.1	3.1	1.5
Y.T. (L)	0.6	0.1	0.8	0.2	0.6	0.1

† In 2017–2018, New Brunswick implemented the interRAI LTCF.

— Data not available.

H: Hospital-based facility.

L: Long-term care home.

2018–2019: Continuing Care Reporting System, July 2019, Canadian Institute for Health Information.

Reference

1. Hirdes JP, et al. [An evaluation of data quality in Canada's Continuing Care Reporting System \(CCRS\): Secondary analyses of Ontario data submitted between 1996 and 2011.](#) *BMC Medical Informatics and Decision Making*. 2013.

ix. [Provincial/Territorial Data Quality Report: Indicators and Contextual Measures — Reference Guide](#)

