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The Canadian Institute for Health Information (CIHI) is pleased to publish the following privacy impact assessment in accordance with its *Privacy Impact Assessment Policy*:

- *Reabstraction Studies Privacy Impact Assessment, October 2015*

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Ottawa – October 2015

Quick facts about reabstraction studies

1. Data quality and information quality are fundamental to the mandate of the Canadian Institute for Health Information (CIHI) to inform public policy, support health care management and build public awareness about the factors that affect health.
2. For these reasons, CIHI has implemented a complete Data and Information Quality Program whose goal is to continuously improve data and information quality within CIHI and the broader health sector. The program includes processes and policies that enhance the quality of CIHI's existing data holdings and ensure that new data holdings and information products meet the standards of quality consistent with CIHI's program objectives.
3. Improving data and information quality is a collaborative effort, and CIHI works with its data suppliers and users to support each of these activities, so that CIHI's data holdings continue to meet changing and expanding user requirements and expectations. Reabstraction studies, which are designed to check the accuracy of the data supplied to CIHI, are a key component of CIHI's Data and Information Quality Program.
4. Reabstraction studies are intended to enhance and support the existing routine data quality activities that CIHI has implemented to prevent, detect, monitor and resolve data issues. Reabstraction studies are conducted by or in consultation with CIHI's Classifications and Terminologies department and Data Quality department, which make up CIHI's directorate of Clinical Data Standards and Quality.
5. CIHI performs reabstraction studies for data holdings that are based on data extracted from patients' medical records or charts. In these studies, CIHI staff visit a sample of submitting health care facilities to review a sample of the original patient charts (electronic or paper) to compare this information with what exists in CIHI's data holding.
6. To date, CIHI has conducted reabstraction studies on the Discharge Abstract Database, the National Ambulatory Care Reporting System and the Canadian Organ Replacement Register.
7. The studies are used to develop recommendations to improve the quality of data submitted to CIHI in the future. CIHI's recent initiative to conduct reabstraction studies on open-year data will also provide feedback to facilities that may result in them submitting corrections to data before year-end. The results of reabstraction studies are relevant to CIHI, participating facilities, regional health authorities, ministries of health and users of CIHI's data.
8. A facility-specific report is shared with each participating facility, and a copy of the record-level data used in the study is returned to the respective facility.
9. A provincial/territorial report is produced for each jurisdiction whose facilities participated in the study.
10. Upon completing the analysis, CIHI produces an overall report describing the data quality characteristics of the data elements evaluated in the study. This aggregate summary report, which contains non-confidential data and reflects all facilities participating in the study, is accessible to the public on CIHI's website.

1 Introduction

The Canadian Institute for Health Information (CIHI) collects and analyzes information on health and health care in Canada. Its mandate is to lead the development and maintenance of comprehensive and integrated health information that enables sound policy and effective health system management that improve health and health care. CIHI obtains data directly from hospitals and other health facilities, long-term care homes, regional health authorities, medical practitioners and governments. This data includes health information about services provided to patients, residents and clients; registration and practice information about health professionals; and health expenditure information.

The purpose of this privacy impact assessment (PIA) is to examine the privacy, confidentiality and security risks associated with reabstraction studies conducted by CIHI.

The assessment includes a review of the 10 privacy principles set out in the Canadian Standards Association's *Model Code for the Protection of Personal Information* as they apply to reabstraction studies at CIHI.

The primary driver for this PIA is compliance with CIHI's [Privacy Impact Assessment Policy](#), in particular the enhancements CIHI is implementing in the process and technology used to collect data for reabstraction studies.

2 Reabstraction studies at CIHI

2.1 Background

Given that data and information quality are critical to CIHI's ability to fulfill its mandate, CIHI carries out a comprehensive and systematic Data and Information Quality Program that provides a variety of benefits. This program is designed to

- Foster a data quality culture;
- Strengthen data quality infrastructure and capacity;
- Cultivate the data supply chain;
- Enhance external data quality collaboration;
- Initiate fast-track priority projects; and
- Promote communication and provide consultation that results in improved data quality.

Reabstraction studies are a key component of the program, and they contribute significantly as they

- Inform users of CIHI's data of any quality limitations associated with specific data holdings so that they may make informed decisions about the usability of the data for their intended purposes;
- Evaluate the quality of coding practices associated with specific data elements;
- Provide facilities with their facility-specific data quality findings to help them assess potential systematic coding issues;
- Help CIHI make changes and clarifications to the Canadian Coding Standards for ICD-10-CAⁱ and CCI,ⁱⁱ which help improve the quality of data submitted to CIHI; and
- Improve CIHI's classification/abstraction education materials, which help improve the quality of data submitted to CIHI.

In the past, CIHI has typically conducted a reabstraction study every 2 years, with a varying number of facilities across the country participating in each study. The frequency and scope of reabstraction studies depends on identified need and available resources.

Historically, results of reabstraction studies were not used to change the data that the facilities had originally submitted to CIHI and that is stored in CIHI's databases. Rather, the studies were used to develop recommendations to improve the quality of data submitted to CIHI in the future. The results of reabstraction studies are relevant to CIHI, participating facilities, regional health authorities, ministries of health and users of CIHI's data. In 2015, CIHI will conduct a study on open-year data (where data for that year is still being submitted by data suppliers), with the additional objective of providing data suppliers with information that will allow them to correct data prior to year-end submissions — in effect, improving data quality prior to the data being used by CIHI.

i. International Statistical Classification of Diseases and Related Health Problems, 10th Revision, Canada.
ii. Canadian Classification of Health Interventions.

2.2 Data flows

CIHI is a secondary data collector of health information. Data flows directly to CIHI from facilities and existing provincial and territorial ministry of health data sources, and CIHI relies on the submission of data collected by these sources. A reabstraction study involves 2 separate data flows. Data flow 1 involves reabstractorsⁱⁱⁱ visiting facilities and reabstracting a facility's records, which contain personal health information, and providing the results of the reabstractions to CIHI, which analyzes the results and prepares reports for facilities and provincial/territorial ministries of health accordingly. Data flow 2 involves selected facilities providing CIHI with de-identified patient records for use in inter-rater reliability testing of reabstractors who participate in reabstraction studies, and for use in creating case studies for CIHI educational products. A high-level description of each data flow is provided in this section, with additional details supplied in sections 3.4 to 3.8, inclusive.

Data flow 1: On-site capture of data and reabstraction for analytical purposes

Data flow 1 is depicted in Figure 1. For each facility, a chart list is prepared. Each chart list contains the minimum information necessary to allow staff in the respective facility to identify and retrieve the patient charts that CIHI requires. CIHI staff transmit a chart list to the appropriate facility using CIHI's web-based application, server-to-server application or other approved secure method of transmission, in compliance with CIHI's *Secure Information Transfer Standard*.

Based on the patient records identified in the chart lists (i.e., the lists supplied to participating facilities), CIHI's Information Technology and Services (ITS) staff configure the CIHI reabstraction database to provide access to the required subset of data to be studied from the appropriate CIHI data holding (this reflects the current subset of data available in the respective CIHI production database). While on site at a facility, reabstractors will have a read-only view of this information via the Reabstraction Web Tool.

CIHI's reabstractors travel to each participating facility and occupy the secure workspace designated by the facility. Typically, the workspace is located in the Health Records department of the respective facility. The facility provides the reabstractor with access to patient charts, based on the chart list supplied by CIHI. The records made available by a facility may be electronic charts, paper charts or some combination of these (hereafter referred to collectively as "patient charts").

iii. For the purposes of the reabstraction study planned for 2015, only CIHI staff will be reabstractors. As has been the case in the past, for larger future studies CIHI may again retain third-party reabstractors on limited-term contracts to visit the facilities participating in a reabstraction study and perform the reabstraction. Third-party reabstractors are typically employees of health facilities who participate in a reabstraction study on secondment from their regular job duties.

From the workspace in the facility, the reabstractor logs in to his or her CIHI-issued laptop and accesses the internet using CIHI-issued or facility-supplied technology that provides the necessary connectivity. The reabstractor links to CIHI via a virtual private network (VPN) and then browses to CIHI Client Services and logs in to his or her Client Services account, which, based on the profile previously assigned by CIHI, provides access to the Reabstraction Web Tool and the associated data retained in/accessible by the reabstraction database.

All reabstraction data for reabstraction studies is completed by authorized reabstractors using the Reabstraction Web Tool. The tool offers the reabstractor the following functionality:

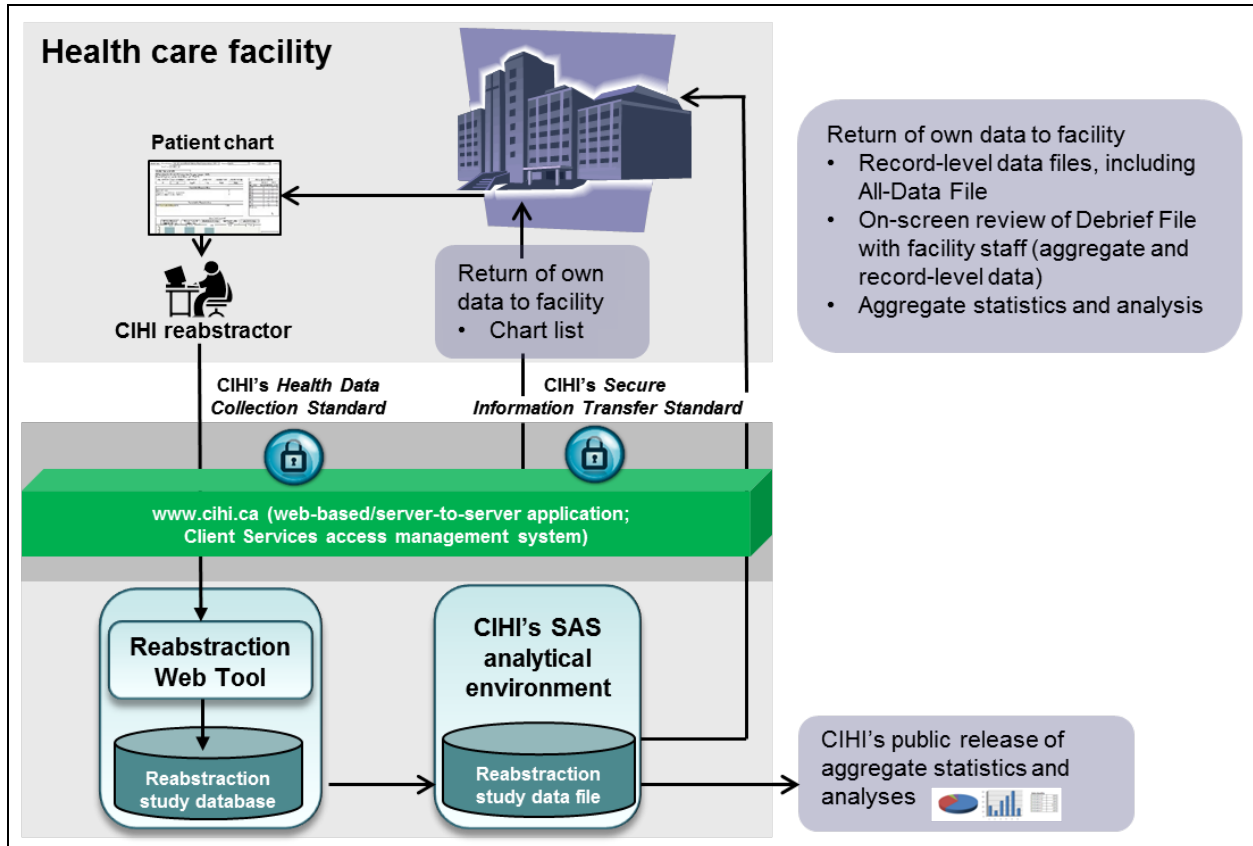
- Search capacity: Search for a record to be reabstracted, based on the data elements Facility Identifier and Chart Number.
- Data entry: Enter data reabstracted from the patient charts accessed at the facility.
- View data: View record-level data (read-only format) accessible via CIHI's reabstraction database and compare this original data with the reabstracted version.
- View system-generated edit and validation results: View the results of system-generated edit checks, validations and reconciliations designed to assist the reabstractor in identifying and interpreting the reason for any discrepancies between the information in the reabstraction database (i.e., the data previously collected by CIHI) and the newly reabstracted data entered from the patient charts supplied by the facility.
- Capture observations: Enter comments regarding analysis of data quality issues identified by the reabstractor.

The Reabstraction Web Tool does not provide the reabstractors with any analytical, output/export or reporting capability. Once data entry has been completed for each chart number, the reabstractor clicks a button to save the data, which is added to the corresponding record-level information already present in the reabstraction database. While reabstractors are in the field, a copy of all data present in the reabstraction database is accessible via the Reabstraction Web Tool. On a daily basis, a copy of the reabstraction database is automatically exported into CIHI's SAS analytical environment (i.e., the Reabstraction Studies Data File).

Authorized CIHI analytical staff access the Reabstraction Studies Data File via CIHI's SAS analytical environment.

While at a facility, reabstractors will provide staff authorized by the facility with an in-person, on-screen review of study data from the respective facility (i.e., the Debrief File containing aggregate and record-level data from that facility). Upon study completion, CIHI returns aggregate and record-level data to the facility from which the data was submitted and/or reabstracted in the first place, in compliance with CIHI's *Secure Information Transfer Standard*. Aggregate facility-level results (i.e., comparing and summarizing the results of all facilities) are published on CIHI's website.

Figure 1 Reabstraction studies: On-site capture of data and reabstraction for analytical purposes, September 2015



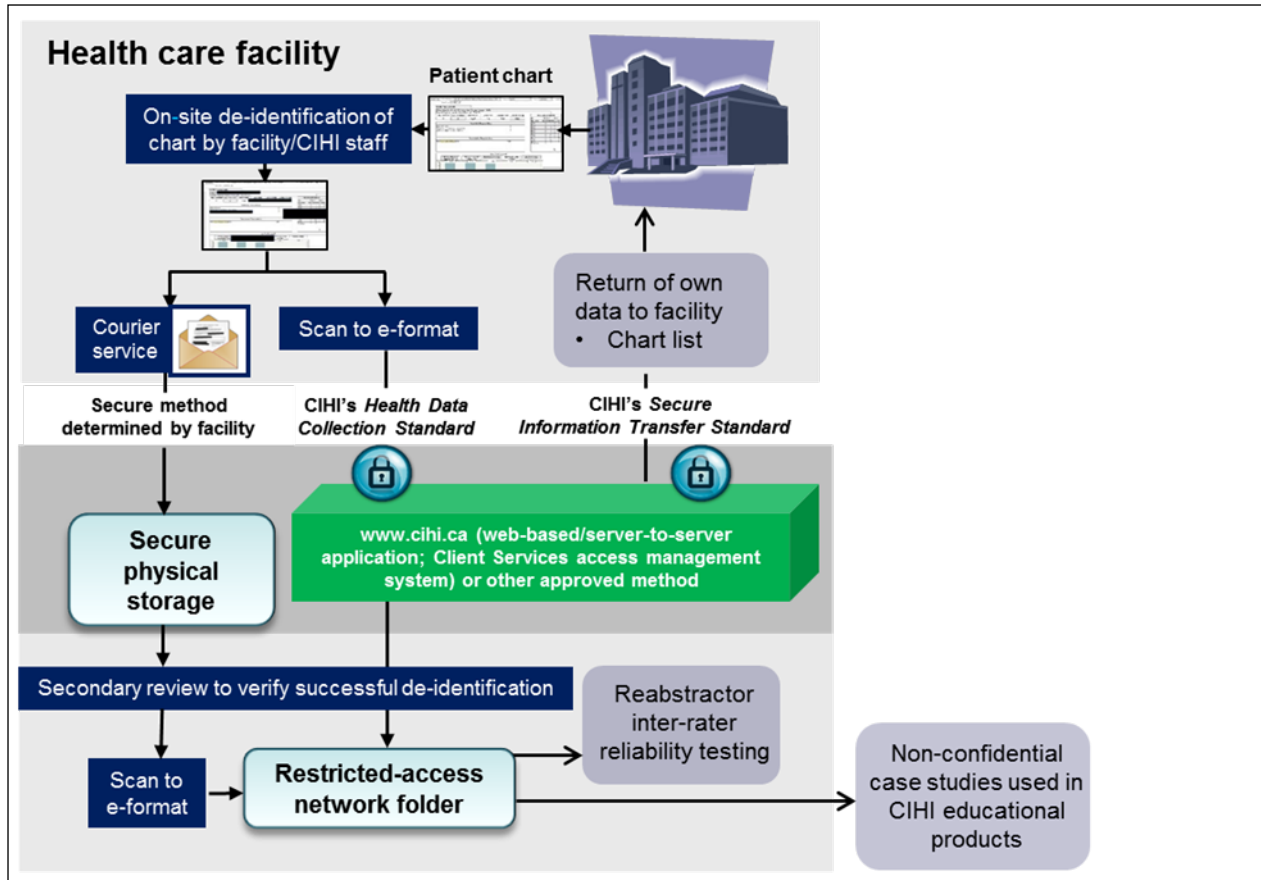
Source
Canadian Institute for Health Information.

Data flow 2: Transferring de-identified records from facilities to CIHI for reabtractor testing and educational case studies

Data flow 2 is depicted in Figure 2. For each facility, a chart list is prepared and disseminated to the appropriate facility, in compliance with CIHI's Secure Information Transfer Standard. Facility staff identify and retrieve the patient charts that CIHI requires and make photocopies of the records, and these same staff (or CIHI staff on site) de-identify these photocopies in the manner prescribed by CIHI to ensure that the re-identification of individuals is not reasonably foreseeable. Once de-identified, the photocopied records are scanned into electronic format and submitted to CIHI using CIHI's web-based application, server-to-server application or other approved secure method, in compliance with CIHI's *Health Data Collection Standard*, or, at the discretion of the facility, using some other secure method (e.g., shipped by courier to staff at the appropriate CIHI office).

De-identified records received by courier are retained in secure physical storage prior to scanning into electronic format. All records received (paper or electronic) are reviewed by CIHI staff to confirm successful de-identification and are then retained in a restricted-access network folder for use by authorized CIHI staff.

Figure 2 Reabstraction studies: Transferring de-identified records from facilities to CIHI for reabtractor testing and educational case studies, September 2015



Source
Canadian Institute for Health Information.

3 Privacy analysis

3.1 Authorities governing CIHI and the reabstraction studies

General

CIHI adheres to its [Privacy Policy, 2010](#) and to any applicable privacy legislation and/or agreements.

Legislation

CIHI is a secondary data collector of health information, specifically for the planning and management of the health system, including statistical analysis and reporting. Data providers are responsible for meeting the statutory requirements in their respective jurisdictions, where applicable, at the time the data is collected.

The following provinces have enacted health information–specific privacy legislation: Newfoundland and Labrador, Nova Scotia, New Brunswick, Ontario, Manitoba, Saskatchewan and Alberta (Prince Edward Island, Yukon and the Northwest Territories are also in the process of implementing such legislation). Health information–specific privacy legislation authorizes facilities to disclose personal health information without patient consent for purposes of health system use, provided that certain requirements are met. For example, CIHI is recognized as a prescribed entity under the *Personal Health Information Protection Act* of Ontario, so health information custodians in Ontario may disclose personal health information to CIHI without patient consent pursuant to Section 29 as permitted by Section 45(1) of the act.

For provinces and territories that do not currently have health information–specific privacy legislation in place, facilities are governed by public-sector legislation. This legislation authorizes facilities to disclose personal information for statistical purposes without an individual’s consent.

Agreements

As indicated in Section 2.2, data will flow to CIHI from participating facilities. Data flow will be governed by CIHI’s [Privacy Policy, 2010](#), existing legislation in the jurisdictions and existing data-sharing agreements with the provinces and territories. The data-sharing agreements set out the purpose, use, disclosure, retention and disposal requirements of personal health information provided to CIHI, as well as any subsequent disclosures that may be permitted.

The agreements also describe the legislative authority under which personal health information is disclosed to CIHI. One of CIHI’s obligations under these agreements is to promote and maintain the integrity of CIHI’s databases, including conducting reabstraction studies.

3.2 Principle 1: Accountability for personal health information

CIHI's president and chief executive officer is accountable for ensuring compliance with CIHI's [Privacy Policy, 2010](#). CIHI has a chief privacy officer and general counsel, a corporate Privacy, Confidentiality and Security team, a Governance and Privacy Committee of its Board of Directors and an external chief privacy advisor.

Organization and governance

The following table identifies key internal senior positions with responsibilities for reabstraction studies in terms of privacy and security risk management:

Position/group	Roles/responsibilities
Vice president, Research and Analysis	Responsible for the overall operations and strategic direction of the reabstraction studies
Director, Clinical Data Standards and Quality	Responsible for strategic and operational decisions about the reabstraction studies
Manager, Classifications and Terminologies — Operations	Responsible for overall management and day-to-day operational decisions about reabstraction studies
Manager, Data Quality	Responsible for management and day-to-day operational decisions about the analytical and reporting components of the reabstraction studies
Chief information security officer	Responsible for the strategic direction and overall implementation of CIHI's Information Security Program
Chief privacy officer	Responsible for the strategic direction and overall implementation of CIHI's Privacy Program
Manager, Health Information Applications, Specialized and Primary Care, Registries, Research and Analysis	Responsible for ensuring that technical requirements for ongoing operations and enhancements for reabstraction studies are met

Steering committees

CIHI encourages co-operation and active participation in data management and data quality with its clients and data suppliers. External committee involvement in reabstraction studies varies depending on the data holding under investigation. For example, the National Clinical Administrative Databases (NCAD) Steering Committee is involved in studies focused on the Discharge Abstract Database (DAD) or the National Ambulatory Care Reporting System (NACRS). The NCAD Steering Committee is composed of representatives from the ministries or departments of health in each of the provinces and territories and representatives from the Public Health Agency of Canada (PHAC) and Statistics Canada. The committee meets formally twice a year to discuss proposed changes to the DAD and NACRS databases, data quality issues, issues with data collection and changes at CIHI that affect the provinces and territories.

3.3 Principle 2: Identifying purposes for personal health information

The primary purpose of reabstraction studies is to continuously improve the quality of CIHI's data holdings. In support of this goal, reabstraction studies involve the collection and use of personal health information. When contacting facilities regarding participation in a reabstraction study, CIHI identifies how the data will be extracted, collected and used. Moreover, through this PIA, CIHI identifies to the broader public how personal health information is used in reabstraction studies.

3.4 Principle 3: Consent for the collection, use or disclosure of personal health information

Participating facilities will disclose data to CIHI for the purposes of planning and managing the health system, including statistical analysis and reporting, under specific legislative authority or by legal agreements between the respective ministry of health and CIHI that govern the flow of data. CIHI is a secondary collector of data and will not have direct contact with patients who received care in a participating facility across Canada. CIHI relies on the participating facilities to abide by and meet their obligations, including those related to consent and notification, as outlined in jurisdiction-applicable laws, regulations and policies.

3.5 Principle 4: Limiting collection of personal health information

CIHI is committed to the principle of data minimization. Per sections 1 and 2 of CIHI's [Privacy Policy, 2010](#), CIHI collects from data providers only the personal health information and de-identified data that is reasonably required for health system uses, including statistical analysis and reporting, in support of the management, evaluation or monitoring of health care systems.

Data flow 1: On-site capture of data and reabstraction for analytical purposes

CIHI limits its reabstraction of personal health information to that which is necessary to support authorized data quality and analytical activities for reabstraction studies.

Data flow 2: Transferring de-identified records from facilities to CIHI for reabtractor testing and educational case studies

CIHI sends facilities a list (i.e., a chart list) of the patient records that CIHI has identified as part of the study. CIHI indicates how a facility must photocopy, prepare and de-identify the paper records. Each facility identifies and accesses the records CIHI has requested, makes photocopies of the records, de-identifies these photocopies in the manner prescribed by CIHI and securely transfers the copies to CIHI in the manner described in Section 3.8 (Principle 7: Safeguards for personal health information).

After receiving the patient records from facilities, CIHI verifies that the records have been de-identified appropriately and further de-identifies them if necessary.

3.6 Principle 5: Limiting use, disclosure and retention of personal health information

Limiting use

Data flow 1: On-site capture of data and reabstraction for analytical purposes

Chart list

Each reabstractor is provided with the same chart list that was supplied to the participating facility to indicate which patient charts at each facility have been selected for inclusion in the study. The facility or the reabstractor uses this list as another means to identify and access the required records. The chart list contains only enough information to permit each patient chart to be identified at the facility. Typically, the list includes the following information for each record:

- Patient identification information,^{iv} such as the patient's chart number at the facility (note that the patient's health card number is not included in the chart list for the 2015 DAD reabstraction study); and
- Date/time information, such as the patient's admission and discharge dates.

Reabstraction Web Tool and reabstraction database

CIHI will also provide reabstractors with read-only access to patient information already retained by CIHI (i.e., data in the reabstraction database, accessible via the Reabstraction Web Tool). This patient information is analyzed and compared with the related personal health information present in patient charts made available by the participating facilities. CIHI does not provide reabstractors with complete patient records for use in reabstraction studies. Instead, each record loaded into the reabstraction database contains only the information necessary for that study. The objectives of the study in question and the CIHI data holding it concerns determine the necessary content of each record. Typically, a record will include the following:

- Patient identification information,^{iv} such as the patient's chart number at the facility, in order to identify and access the charts required for the reabstraction study. (Note that the patient's health card number is not included in the records for the 2015 DAD reabstraction study.)
- Demographic data, such as patient gender and age, that is used in CIHI's grouping methodology. Other demographic data, such as gender, birthdate and postal code, is included to help identify a patient chart in a facility that does not use a chart number to identify a patient. In these facilities, other identifiers are used in conjunction to identify a unique individual. Depending on the study, certain demographic data may be collected as part of the study design.

iv. CIHI's procedures are designed to minimize privacy and security risks associated with the use of identifiers. For example, the patient's health card number is not included in the records for DAD reabstraction studies because the chart number and facility number provide the primary patient identifier required for individual facilities to identify the correct patient chart within their facility. For reabstraction studies conducted on data holdings where health card number and patient name are the primary identifiers used by facilities (e.g., Canadian Organ Replacement Register), these identifiers will be included in the record provided to a facility. However, when reabstractors record the results of a reabstraction, they do not record patient health card number or name for any reabstraction study.

- Patient clinical information, such as diagnoses and interventions.
- Date/time information, such as the patient's admission and discharge dates.
- Facility-identifying information, such as facility number.

A reabstractor reviews the selected patient charts at each facility and then reabstracts and recodes each record into the Reabstraction Web Tool. Functionality in the tool then supports the reabstractor in comparing information entered from each reabstracted chart with the version of the patient's record that the facility originally abstracted and submitted to CIHI. By comparing the 2 records (i.e., the reabstracted one and the one originally abstracted by the facility), the tool identifies any coding discrepancies between the records. The results of this comparison, including possible reasons for discrepancies between the records that the reabstractor discovered and entered, are transmitted to CIHI for storage in the reabstraction database.

Through this practice, CIHI limits the use of personal health information and complies with its [Privacy Policy, 2010](#) while conducting reabstraction studies, ensuring that staff access personal health information on a need-to-know basis only.

CIHI's SAS environment and restricted-access network folder

CIHI will limit the use of reabstraction study data to authorized purposes, as described in Section 3.3. These include comparative analyses within and among jurisdictions; trend analyses to assess/monitor the impact of differences in policy, practices and service delivery; and statistics to support planning, management and quality improvement. CIHI staff will be permitted to access and use data on a need-to-know basis only, including for data processing and quality management, producing statistics and data files, and conducting analyses (access is authorized, administered and revoked through CIHI's centralized Service Desk). All CIHI staff are required to sign a confidentiality agreement at the commencement of employment, and they are subsequently required to renew their commitment to privacy yearly.

Data flow 2: Transferring de-identified records from facilities to CIHI for reabstractor testing and educational case studies

CIHI's restricted-access network folder

In the event that a facility provides de-identified photocopies of patient records in paper format, CIHI will retain the records in a secure location accessible to only a limited number of authorized staff. Following review by CIHI staff to verify successful de-identification, records are scanned and electronic copies stored in a restricted-access network folder accessible to authorized staff only, and paper copies are deposited into confidential shredding boxes for secure destruction, in compliance with CIHI's *Information Destruction Standard*. CIHI then uses the de-identified patient records for inter-rater reliability testing of reabstractors and to generate meaningful (non-confidential) case studies for use in its educational products.

Data linkage

Reabstraction studies do not involve data linkage activities.

Return of own data

Data flow 1: On-site capture of data and reabstraction for analytical purposes

While the reabtractor is on site at a facility, copies of data in the reabstraction database are processed into CIHI's SAS analytical environment on a daily basis. Data Quality staff at a CIHI office will use the reabstraction data files in SAS to prepare a Debrief File for each facility and will place the file in a restricted-access folder located on CIHI's network (access is authorized, administered and revoked through CIHI's centralized Service Desk). The folder provides restricted access to authorized CIHI staff, with access available for a limited time period (defined by each study).

The Debrief File contains aggregate and record-level de-identified data reflecting CIHI's preliminary findings from the reabstraction effort taking place at a facility (usually based on 3 out of 5 days of data collection). Using the CIHI-issued laptop and over CIHI's VPN, reabstraction staff access the Debrief File and review the material on screen with staff from the respective facility. The reabtractor ensures that facility staff are permitted to review on screen only the Debrief File containing data from their own facility. CIHI does not supply paper or electronic copies of the Debrief File to the facility, as data represents preliminary findings that still require edits and further processing prior to use.

Privacy risk 1: Unauthorized disclosure of record-level data to facility staff during on-screen review of Debrief File

The process for reviewing the Debrief File with facility staff involves a number of manual steps and is therefore prone to error. The risk is that a reabtractor will select the wrong Debrief File and as a result provide unauthorized access to another facility's data.

Mitigation measures introduced as a result of this PIA:

A. Authorized staff at CIHI office

Staff create an Excel file containing summary results comparing original DAD data with reabstracted data for each facility debrief process. This file contains aggregate and record-level data. The following measures will be in place to ensure that only the appropriate Debrief File is accessed by a reabtractor:

1. Each Debrief File contains results for 1 facility in a Microsoft Excel workbook containing several worksheets.
2. Debrief Files are stored in a restricted-access network folder and organized such that there is a specific folder for each reabtractor with specific sub-folders for their assigned facilities. Only working files will be available, which means that after a facility debrief has taken place, the files are removed from the folder and can no longer be opened inadvertently. Data Quality staff are responsible for placing the files into and then removing the files from the restricted-access network folder, based on the reabstraction data collection schedule. Copies of the Debrief File will be maintained in the SAS analytical environment for analytical purposes and in the event that a facility requests a copy of its file. Only authorized staff on site at CIHI, not reabtractors, have access to the SAS analytical environment.
3. To provide a visible check, the file name assigned to each Debrief File contains the facility name and number.

4. The first worksheet of each Debrief File contains only the name of the facility (i.e., no data), so that in the unlikely event that a reabstractor inadvertently opens the wrong facility's file, the screen will not display any data and the mistake will be detected immediately. Each Debrief File will be prepared so that the worksheet containing only the facility name is always displayed first upon opening.
5. Each Debrief File is encrypted and password protected, in accordance with CIHI's file encryption procedures.
6. A checklist is used to ensure that all the procedures above are followed. Compliance will be verified by a second staff member prior to notifying the reabstractor in the field that the file is available to access.

B. Reabstractor at facility

A reabstractor schedules a facility's debrief session to occur sometime during the week that he or she is in that facility (usually Thursday or Friday). The following measures are in place to ensure that each reabstractor provides on-screen viewing of the correct Debrief File for the correct facility:

1. Mandatory training completed by reabstractors includes a module on the facility debrief sessions and clearly specifies that the files are to be shared only on screen and are not to be printed, saved elsewhere, emailed or shared in any manner other than the actual live debrief session. If a facility requests a copy of its file, it must go through CIHI's standard data request process for return of own data. Facilities are informed that the information viewed at the time of the debrief session is preliminary and incomplete, and that the facility will be receiving a comprehensive report at a later date.
2. Once notified that access to the Debrief File is available, each reabstractor will review the file prior to the debrief session with facility staff present, to ensure that the Debrief File contains data for the appropriate facility.
3. The reabstractor must enter the correct password to decrypt and access the Debrief File for the assigned facility.

Privacy and Security Risk Management (PSRM) review (September 23, 2015)

Likelihood of risk occurring: Low

Potential impact of risk occurring: Low

Risk score (value): Low

Recommended treatment: No additional treatment to recommend at this time

At the end of a reabstraction study, CIHI provides each facility with a data file that includes the data the facility originally submitted to CIHI and the study data for that facility (i.e., the All-Data File). The All-Data File contains the same data that the facility originally provided to CIHI. In accordance with Section 34 of CIHI's [Privacy Policy, 2010](#), this constitutes a return of own data and is not considered a disclosure of personal health information.

Similarly, CIHI provides each ministry of health with a data file containing the study data for the facilities in the respective province/territory that participated in the reabstraction study. Section 34 of CIHI's [Privacy Policy, 2010](#) confirms that CIHI may return personal health information to the relevant ministry of health for data quality and other purposes consistent with the ministry's mandate and the legislation in the jurisdiction.

CIHI also provides participating facilities and/or ministries of health with an overall report describing the data quality characteristics of the data elements evaluated in the study. This aggregate summary report reflects all facilities participating in the study.

Limiting disclosure

Public release of reabstraction studies data

Data flow 1: On-site capture of data and reabstraction for analytical purposes

CIHI provides the public with access to reports regarding the data quality of CIHI's various information holdings. The published reports contain aggregated, non-confidential data.

As part of its mandate, CIHI releases aggregate data only in a manner designed to minimize any risk of identification and residual disclosure. Aggregate statistics and analyses are made available in publications and on CIHI's website. This generally requires a minimum of 5 observations per cell.

Limiting retention

Reabstraction studies form part of CIHI's data holdings and, consistent with its mandate and core functions, CIHI retains such information for as long as necessary to meet the identified purposes. Secure destruction of data, when it is no longer necessary, is in compliance with CIHI's *Secure Destruction Policy* and *Information Destruction Standard*. Table 1 outlines the retention periods for the identified reabstraction study data.

Table 1 Retention period for reabstraction study data

Data	Retention period
Data flow 1: On-site capture of data and reabstraction for analytical purposes	
Data uploaded to or reabstracted into the reabstraction study database	Secure destruction following return of all CIHI-issued laptops used in the particular study and no later than 30 days after study close
Original and all copies of record-level reabstraction data including, for example, chart lists and Debrief Files retained in a restricted-access network folder outside of the SAS analytical environment	Secure destruction 30 days after study close
All data files retained in a CIHI restricted-access network folder	Secure destruction 1 calendar year after study close
Reabstraction study data retained in CIHI's SAS environment	As long as necessary to meet the identified purposes

Data	Retention period
Data flow 2: Transferring de-identified records from facilities to CIHI for reabtractor testing and educational case studies	
Paper copies	Retained in a secure location until CIHI staff verify successful de-identification and scan copies into a restricted-access network folder; following storage in electronic format, paper copies are deposited into confidential shredding boxes for secure destruction
Electronic copies	Retained in a restricted-access network folder as long as necessary to meet the identified purposes

3.7 Principle 6: Accuracy of personal health information

The purpose of reabstraction studies is to assess the accuracy of the data CIHI uses to generate information used in the planning and management of health systems and to provide recommendations on how to improve data quality going forward. For studies performed on preliminary (open-year) data, opportunity exists to correct data prior to database closure, thus improving the accuracy of data prior to its submission to CIHI. Reabstraction studies, however, are not intended to address the accuracy of the information entered into a chart, but only whether that information was accurately coded and submitted to CIHI.

3.8 Principle 7: Safeguards for personal health information

CIHI’s Privacy and Security Framework

CIHI has developed a [Privacy and Security Framework](#) to provide a comprehensive approach to privacy and security management. Based on best practices from across the public, private and health sectors, the framework is designed to coordinate CIHI’s privacy and security policies and provide an integrated view of the organization’s information management practices. Key aspects of CIHI’s system security, with respect to reabstraction study data, that will eventually be developed, are highlighted below.

CIHI system security

CIHI recognizes that information is secure only if it is secure throughout its entire life cycle: creation and collection, access, retention and storage, use, disclosure and disposition. Accordingly, CIHI has a comprehensive suite of policies that specifies the necessary controls for the protection of information in both physical and electronic formats, up to and including robust encryption and secure destruction. This suite of policies and the associated standards, guidelines and operating procedures reflect best practices in privacy, information security and records management for the protection of the confidentiality, integrity and availability of CIHI’s information assets.

System control and audit logs are an integral component of CIHI's Information Security Program. CIHI's system control and audit logs are immutable. Analysis at CIHI is generally conducted with the use of de-identified record-level data, where the health card number has been removed or encrypted. In exceptional instances, staff will require access to original health card numbers. Section 10 of CIHI's internal *Privacy Policy and Procedures, 2010* sets out strict controls to ensure that access is approved at the appropriate level and in the appropriate circumstances, and that the principle of data minimization is adhered to at all times. CIHI logs access to personal health information as follows:

- Access to health card numbers and patient names (rarely collected) within CIHI's operational production databases;
- Access to data files containing personal health information extracted from CIHI's operational production databases and made available to the internal analytical community on an exceptional basis; and
- Changes to permissions in operational production databases.

CIHI's employees are made aware of the importance of maintaining the confidentiality of personal health information and other sensitive information through a mandatory privacy and security training program and through ongoing communications about CIHI's privacy and security policies and procedures. All staff sign a confidentiality agreement at the commencement of employment, and they must renew this agreement on an annual basis thereafter. Employees attempting to access a CIHI information system must confirm, prior to each attempt to log in, their understanding that they may not access or use the computer system without CIHI's express prior authority or in excess of that authority.

CIHI is committed to safeguarding its information technology ecosystem, securing its data holdings and protecting information with administrative, physical and technical security safeguards appropriate to the sensitivity of the information. Audits are an important component of CIHI's overall Information Security Program; they are intended to ensure that best practices are being followed and to assess compliance with all information security policies, procedures and practices implemented by CIHI. Audits are used to assess, among other things, the technical compliance of information-processing systems with best practices and published architectural and security standards; CIHI's ability to safeguard its information and information-processing systems against threats and vulnerabilities; and the overall security posture of CIHI's technical infrastructure, including networks, servers, firewalls, software and applications.

An important component of CIHI's audit program is regular third-party vulnerability assessments and penetration tests of its infrastructure and selected applications. All recommendations resulting from third-party audits are tracked in the Corporate Action Plan Master Log of Recommendations, and action is taken accordingly.

The following highlights are particularly relevant to the security of reabstraction study information:

- CIHI provides facilities participating in reabstraction studies with written instructions regarding the facilities' responsibilities. These instructions explain CIHI's expectations for the studies, such as the need for facilities to provide reabstractionists with secure workspaces.

- Only CIHI-issued laptops are used by reabstractors. CIHI-issued laptops are protected with strong, complex passwords and pre-boot, full disk encryption. In accordance with CIHI's *Username and Password Standard*, the approved username and password schemas and standards for the various accounts and services are enforced through the account administration process.
- As a general rule, CIHI requires work performed by employees/contractors to be done on CIHI's premises and/or over its secure networks. Reabstractors are required to go through a VPN whenever connecting remotely to CIHI's internal network, providing a dedicated, encrypted connection.
- Personal health information cannot be stored on mobile computing equipment except in specific and exceptional circumstances. In the past, one such exceptional circumstance was CIHI's reabstraction studies. For the purposes of such studies, reabstractors were authorized to store data containing personal health information on laptops and then back up the data on USB keys (both laptops and USB keys being mobile devices). With the development of the Reabstraction Web Tool, personal health information will no longer be stored on laptops or USB keys for the purposes of reabstraction studies. Reabstractors are instructed to not store a copy of any record-level health information (e.g., chart list, Debrief File) on their CIHI-issued laptop. As a precaution, to address the risk of inadvertent retention of confidential information on the CIHI-issued laptops during reabstraction studies, CIHI laptops returned by reabstractors are securely wiped by CIHI's Infrastructure Services staff, in compliance with CIHI's *Secure Destruction Policy and Information Destruction Standard*.
- All CIHI web-based services/applications are accessed via industry-standard, encrypted, secure socket layer (SSL) sessions. This includes reabstractor access to and use of the Reabstraction Web Tool, as well as the web-based services CIHI provides to facilities and ministries in order to gain access to their own data files at the conclusion of a reabstraction study (e.g., return of own data, such as the All-Data File). The web-based applications include technical safeguards to help ensure that each facility's data file is available to only the particular facility or the appropriate ministry of health. For example, when a user logs in to the application, the interface displays the contact information and related information associated with that username and asks the user to confirm that it is his or her information (i.e., are you the individual the tool thinks you are?). Also, the application confirms that the user wishes to download a data file before initiating the download.
- CIHI's Central Client Services (CCS) department manages access using established access management system (AMS) processes for granting and revoking access to restricted services, such as the Reabstraction Web Tool and the web-based services CIHI provides to facilities. CIHI's access management procedures ensure that each user is given access to only those restricted services that he or she is authorized to access, and access is removed in a timely manner when no longer required for the purposes of reabstraction studies. All requests for access to the Reabstraction Web Tool must have approval by the application owner before access is granted. For the purposes of the 2015 DAD reabstraction study, the manager of Classifications and Terminologies — Operations is the application owner.

Privacy risk 2: Inappropriate CIHI staff access to record-level data

CIHI's Reabstraction Web Tool is classified as a high-risk system in view of the sensitive record-level information contained in the reabstraction database. Therefore, it is critical that the reabstraction database can be accessed by only authorized CIHI staff. Currently, only CIHI staff assume the role of reabtractor; however, past projects have employed external professional staff/contractors to perform this work for CIHI. Inappropriate access to sensitive record-level data contained in the reabstraction database could occur if there are missing controls or non-compliance with existing administrative controls for CIHI's AMS processes for granting and revoking access.

A recent incident involving data retained from past reabstraction studies has highlighted the need to reassess the retention plan for reabstraction study data in order to reduce the risk of inappropriate access to record-level data.

Mitigation measures introduced as a result of this PIA:

1. The Service Desk implemented enhanced procedures to ensure that when CIHI's Human Resources department initiates immediate revocation of staff access, staff access to CIHI's external applications (including the Reabstraction Web Tool) will also be revoked immediately as well.

The following additional mitigation measures are recommended:

2. By the end of Q3 2015–2016, Classifications and Terminologies will embed the following requirements in the reabstraction studies procedures and study project plan template to ensure compliance with the following retention plan for reabstraction study data:

Data	Retention period
Data flow 1: On-site capture of data and reabstraction for analytical purposes	
Data uploaded to or reabstracted into the reabstraction study database	Secure destruction following return of all CIHI-issued laptops used in the particular study no later than 30 days after study close Current procedure and plan to reflect Classifications and Terminologies — Operations staff responsibility to initiate request for <ul style="list-style-type: none"> • Revocation of access to the Reabstraction Web Tool via CCS; and • Secure destruction of all data in the reabstraction study database via Service Desk request
Original and all copies of record-level reabstraction data including, for example, chart lists and Debrief Files retained in a restricted-access network folder outside of the SAS analytical environment	Secure destruction 30 days after study close Current procedure and plan to reflect Data Quality staff responsibility to delete files, with support from Service Desk as required
All data files retained in a CIHI restricted-access network folder	Secure destruction 1 calendar year after study close Current procedure and plan to reflect Data Quality staff responsibility to delete files, with support from Service Desk as required
Reabstraction study data retained in CIHI's SAS environment	As long as necessary to meet the identified purposes

Data	Retention period
Data flow 2: Transferring de-identified records from facilities to CIHI for reabtractor testing and educational case studies	
Paper copies	Retained in secure location until CIHI staff verify successful de-identification and scan copies into a restricted-access network folder; following storage in electronic format, paper copies are deposited into confidential shredding boxes for secure destruction, in compliance with CIHI's <i>Information Destruction Standard</i>
Electronic copies	Retained in a restricted-access network folder as long as necessary to meet the identified purposes

3. CCS to conduct an annual audit of CIHI staff with access to high-risk applications/services to verify that access is revoked when no longer necessary. It is recommended that CCS consider coordinating the audit with CIHI's annual SAS data access audit to reduce burden on data owners.

PSRM review (September 22, 2015)

Likelihood of risk occurring: Medium

Potential impact of risk occurring: Low

Risk score (value): Low

Recommended treatment: No additional treatment to recommend at this time

- As noted previously in Section 2.2, only CIHI staff will perform the role of reabstractors during the reabstraction study planned for 2015. In the future, if large studies are required, CIHI may retain third-party reabstractors on limited-term contracts to visit the facilities participating in a reabstraction study and perform the reabstraction. CIHI's centralized procurement and onboarding procedures ensure that all employees/contractors with access to CIHI systems or data have signed the appropriate confidentiality agreement and completed mandatory privacy and security training at the commencement of employment and prior to accessing personal health information.
- In addition to mandatory privacy and security training completed by all CIHI staff in compliance with CIHI's [Privacy and Security Training Policy](#), and prior to participating in reabstraction studies, reabstractors complete additional training provided by CIHI. The training is primarily focused on reabstraction and coding, but key CIHI privacy and security obligations most relevant to reabstraction work are highlighted in the content, including secure travel and mobile computing tips, secure use, communication and transfer of confidential and restricted information, and the requirement to reabstract data using only the Reabstraction Web Tool.

Privacy risk 3: Reabstractors unaware of relevant CIHI privacy and security requirements of specialized work

Reabstraction of data during reabstraction studies is a unique and specialized activity. Unlike most other CIHI staff, reabstractors are authorized to access patient charts in facilities containing direct identifiers, such as name, address, health card number and other detailed and sensitive personal health information. As noted previously, currently only CIHI staff assume the role of reabstractor; however, past projects have employed external professional staff/contractors to perform this work for CIHI. Typically, contractors are seconded hospital staff who are likely to be familiar with the requirements of working with health information in the context of a facility/circle of care, though not necessarily under the limits imposed on CIHI's operations by policy, agreements and status under legislation.

Mitigation measures introduced as a result of this PIA:

1. Module 1: Privacy and Security section of reabstractor training updated to reflect operational requirements unique to reabstraction studies.

PSRM review

Likelihood of risk occurring: Medium

Potential impact of risk occurring: Low

Risk score (value): Low

Recommended treatment: No additional treatment to recommend at this time

- CIHI indicates how a facility must photocopy, prepare and de-identify the photocopied paper records. Each facility identifies and accesses the records CIHI has requested, makes photocopies of the records, de-identifies these photocopies in the manner prescribed by CIHI and securely transfers the copies to CIHI.
- In instances where facilities can provide CIHI with de-identified electronic records, CIHI provides the following secure options for transferring electronic records, in order of preference recommended by CIHI's *Health Data Collection Standard*:
 - CIHI's web-based applications or server-to-server application;
 - Courier of electronic medium, such as a CD/DVD (encrypted and password protected using approved methods); and
 - Email of file (encrypted and password protected using approved methods).

While CIHI prefers to receive electronic copies of de-identified records submitted in accordance with its *Health Data Collection Standard*, for reasons of practicality, facilities participating in reabstraction studies may choose to provide CIHI with paper copies of de-identified records by fax or courier.

Privacy risk 4: CIHI collects personal health information/record-level de-identified data using a method that does not ensure the confidentiality, integrity and availability of data during this phase of the information life cycle

CIHI has made significant investments in providing clients with secure methods to supply confidential information, including record-level de-identified data. However, it is understood that CIHI has varying levels of control/influence with respect to how (and how securely) data providers ultimately decide to submit data to CIHI.

While CIHI prefers to receive electronic copies of de-identified records, submitted in accordance with its *Health Data Collection Standard*, for reasons of practicality, facilities participating in reabstraction studies may choose to provide CIHI with paper copies of de-identified records by fax or courier. CIHI provides instructions to facilities about how photocopied records must be de-identified prior to transfer to CIHI; however, in the past, de-identified records have been inadvertently submitted to CIHI without what CIHI would assess as sufficient de-identification. This PIA determined that CIHI staff conducting reabstraction studies were not fully aware of requirements under CIHI's *Health Data Collection Standard* and that internal study procedures did not reflect current requirements.

Mitigation measures introduced as a result of this PIA:

By the end of Q3 2015–2016, Classifications and Terminologies to

1. Update current procedures for reabstraction studies to reflect the relevant requirements prescribed in CIHI's privacy and security policies, procedures and standards, including but not limited to the requirements under CIHI's *Health Data Collection Standard* for staff to
 - Notify facility staff of CIHI's preferred methods of acquisition and use of 1 (or more) of the methods of data submission outlined in this standard; and
 - Consult ITS Security at CIHI to confirm whether other options are not viable in the circumstances; and
2. Ensure that the project plan template for reabstraction studies includes the review and update of procedures at least 90 days prior to study launch.

PSRM review (September 22, 2015)

Likelihood of risk occurring: Low

Potential impact of risk occurring: Medium

Risk score (value): Low

Recommended treatment: No additional treatment to recommend at this time

3.9 Principle 8: Openness about the management of personal health information

CIHI makes information available about its privacy policies, data practices and programs relating to the management of personal health information. Specifically, CIHI's [Privacy and Security Framework, 2010](#) and [Privacy Policy, 2010](#) are available to the public on its corporate website (www.cihi.ca).

3.10 Principle 9: Individual access to, and amendment of, personal health information

Personal health information held by CIHI is not used by CIHI to make any administrative or personal health decisions affecting the individual. Requests from individuals seeking access to their personal health information will be processed in accordance with sections 60 to 63 of CIHI's [Privacy Policy, 2010](#).

3.11 Principle 10: Complaints about CIHI's handling of personal health information

As set out in sections 64 and 65 of CIHI's [Privacy Policy, 2010](#), complaints about CIHI's handling of personal health information are investigated by the chief privacy officer, who may direct an inquiry or complaint to the privacy commissioner of the jurisdiction of the person making the inquiry or complaint.

4 Privacy assessment summary and conclusion

There are no recommendations at this time, and privacy risks identified during this assessment have been mitigated. This PIA will be updated or renewed in compliance with CIHI's [Privacy Impact Assessment Policy](#).