# Patient-Level Physician Billing Repository

## Privacy Impact Assessment

April 2022

Canadian Institute for Health Information
Institut canadien d'information sur la santé

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Canadian Institute for Health Information
495 Richmond Road, Suite 600
Ottawa, Ontario  K2A 4H6
Phone: 613-241-7860
Fax: 613-241-8120
cihi.ca
copyright@cihi.ca



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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*:

- *Patient-Level Physician Billing Repository Privacy Impact Assessment, April 2022*

Approved by

Brent Diverty
Vice President, Data Strategies and Statistics

Rhonda Wing
Executive Director, Chief Privacy Officer and General Counsel, Office of the Chief Privacy Officer and Legal Services

Ottawa, April 2022

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# Quick facts about the Patient-Level Physician Billing Repository

1. The Patient-Level Physician Billing (PLPB) Repository at the Canadian Institute for Health Information (CIHI) was established to
   - Support patient-focused analysis (e.g., of age–sex- and morbidity-adjusted health care use by different populations) in areas such as primary care, virtual care and community mental health;
   - Support CIHI's development of more comprehensive inpatient cost estimates that include physician costs, as well as other methodologies and tools to support analysis of health services; and
   - Enhance the quality of historical National Physician Database (NPDB) data and indicators (e.g., full-time equivalents, cost per service).
2. The PLPB Repository collects patient-level provider[i] claims data for services insured under the provincial and territorial medical care plans. The repository is made up of claims data that is similar to that collected through CIHI's existing NPDB submission specifications, with the addition of personal health information, including the jurisdiction-issued health care number.
3. Saskatchewan Health (spring 2011) and Alberta Health (spring 2013) initially provided CIHI with 3 years of data to conduct a pilot to demonstrate CIHI's capacity to use PLPB data to respond to a broad range of analytical questions.
4. The positive results of the pilot and growing jurisdictional interest in CIHI's population grouping methodology (the POP Grouper) led to increased support from a number of jurisdictions. In response, CIHI continued to develop a PLPB data collection standard and seek data from other jurisdictions. The POP Grouper produces a risk-adjusted composite measure of the burden of illness or future use of health services by populations. A privacy impact assessment (PIA) specific to the POP Grouper and the various data sources it relies on, including PLPB data, is available on cihi.ca.[ii]
5. As of 2021, Newfoundland and Labrador, Nova Scotia, Ontario, Manitoba, Saskatchewan, Alberta and British Columbia have supplied PLPB data to CIHI. CIHI continues to work with other jurisdictions to obtain national coverage.

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i. The vast majority (approximately 90%) of the remunerations captured in the PLPB Repository and the NPDB relate to services provided by physicians. However, information about other service providers (e.g., nurse practitioners) who are remunerated by the provincial and territorial medical care plans is also collected in the PLPB Repository and the NPDB. The physician-centric nomenclature is retained in this PIA to align with existing PLPB documentation and to avoid confusion.

ii. When the POP Grouper's PIA was published, the methodology was known as the Population Risk Adjustment Grouping Project.

# 1 Introduction

The Canadian Institute for Health Information (CIHI) collects and analyzes information on health and health care in Canada. Its mandate is to deliver comparable and actionable information to accelerate improvements in health care, health system performance and population health across the continuum of care. CIHI obtains data from hospitals and other health care facilities, long-term care homes, regional health authorities, medical practitioners and governments. This data includes information about health services provided to individuals, the health professionals who provide those services and the cost of the health services.

The purpose of this privacy impact assessment (PIA) is to examine the privacy, confidentiality and security risks associated with the Patient-Level Physician Billing (PLPB) Repository. This PIA, which replaces the 2015 version, includes a review of the 10 privacy principles set out in the Canadian Standards Association's *Model Code for the Protection of Personal Information* and how the principles apply to the PLPB Repository, as well as a look at the application of CIHI's *Privacy and Security Risk Management Framework*.

The primary driver for this PIA is compliance with CIHI's *Privacy Impact Assessment Policy*.

# 2 Background

## 2.1 Introduction to the Patient-Level Physician Billing Repository

The National Physician Database (NPDB) contains physician-level information on the demographic characteristics of physicians, their remuneration and their activity levels. The data is used to report on services provided by physicians and payments made to them by provincial and territorial medical insurance plans.

Historically, physicians in Canada were paid mostly on a fee-for-service (FFS) basis. Over time, there has been a migration to various non-FFS (alternative) payment plans that are designed to better meet the specific needs of jurisdictions and regional areas. FFS data captures considerable detail about a physician's interactions with patients; this level of detail is not yet available in the non-FFS or alternative payment program (APP) information submitted by the jurisdictions to CIHI. As of 2018, about 70% of total physician payments were FFS, but this proportion varies considerably by physician specialty and by province and territory. Under the current model of submission, when the FFS data is submitted to CIHI by the provincial and territorial ministries of health, it is aggregated to the physician level.

This means that for any fee code in a province or territory's schedule of fees, payments are aggregated to each physician according to the total payments and number of associated services provided to their male and female patients. The APP data is also submitted to CIHI at an aggregate level by most jurisdictions.

A feasibility study on collecting PLPB data was completed in 2009. The findings of this study confirmed that all provinces and territories collect and maintain PLPB data and use the information to inform policy development and decision-making. In addition, the study confirmed that CIHI's collection of PLPB data had the potential to significantly improve data, information and understanding in several areas of stakeholder interest, such as primary health care and the cost of physician services.

Although the data and analysis from the NPDB have served CIHI's stakeholders well in the past, there has been an ever-growing need for more detailed PLPB data rather than data rolled up/aggregated to the physician level. Patient-level information, including a patient's health care number, would permit linkage of PLPB data to other CIHI databases and open up entirely new areas of analysis focused on patient interactions and their various health care providers across treatment paths and their outcomes.

Saskatchewan Health (spring 2011) and Alberta Health (spring 2013) provided CIHI with 3 years of data to conduct a pilot to demonstrate CIHI's capacity to use PLPB data for analysis. This pilot clearly showed the potential for PLPB data to improve CIHI's understanding of the information submitted to the NPDB, providing a better understanding of physicians as providers of care; their practices; their levels of compensation, including benefits and other practice costs; practice intensities; and patient perspectives. The final pilot project reports based on Saskatchewan and Alberta data describe the experience and the results of analyses completed using the PLPB data and recommended proceeding with ongoing data submissions from both provinces (unpublished internal documents, CIHI, 2012 and 2014).

Positive pilot results and increased support and interest from a number of jurisdictions have led to CIHI's decision to continue developing the PLPB Repository.

## 2.2 Data collection

Provincial and territorial ministries of health generate provider claims data on the payments they have made to physicians for the insured services that physicians have provided to their patients. For example, physicians submit claims to provincial and territorial medical care plans to receive payment for the health services they delivered to patients. The data generated through the primary process of paying physicians is subsequently submitted to CIHI.

Each record submitted to the PLPB Repository reflects the jurisdiction-specific data set that conforms, to the degree possible, with the minimum data set requested by CIHI. Records include the following data elements:

### Patient information

- Health Care Number
- Patient's Postal Code
- Patient Date of Birth
- Patient Sex
- Service Location Indicator

### Physician billing information

- Physician identifiers/demographic information
  - Unique Physician Identifier
  - Foreign-Certified Physician Indicator
  - Physician Age
  - Physician Gender
  - Graduation Year
  - Referring Physician Identity Number
- Service location information
  - Facility Identifier
  - Postal Code/Area Code
  - Facility Type
  - Functional Centre
- Service information
  - Service Date
  - Diagnostic Code
  - Service Location Indicator
  - Remuneration Mode

- Source of Payment/Program Type
- Claim Number
- Fee Code
- Number of Services
- Number of Units
- Fee Paid
- Fee Paid Date

## 2.3 Access management, data submission and flow for the PLPB Repository

Each data provider (i.e., jurisdictional ministries of health) extracts a jurisdiction-specific data set from its existing data sources that conforms, to the degree possible, with the minimum data set requested by CIHI.

Access to CIHI's secure applications is subject to CIHI's role-based access management process, which is managed by CIHI's Product Management and Client Experience (PMCE) department. PMCE manages access to CIHI's secure applications using established access management system (AMS) processes for granting and revoking access.

Once authenticated through CIHI's AMS, PLPB data providers submit to CIHI record-level data through CIHI's secure web-based electronic Data Submission Services (eDSS) or other direct server-to-server options.

Once received by CIHI, PLPB data files immediately undergo automated checks for file inconsistencies against jurisdiction-specific specifications, and the jurisdiction-issued health care number in each file is encrypted. Once the health care numbers have been encrypted, each jurisdiction-specific PLPB data file is accessed by a limited number of authorized staff for additional processing before the files are transferred to CIHI's SAS analytical environment. This secondary processing may include correcting errors in consultation with data providers (as an alternative to file resubmission) and deleting data elements not required for routine analytical use within CIHI's SAS analytical environment.

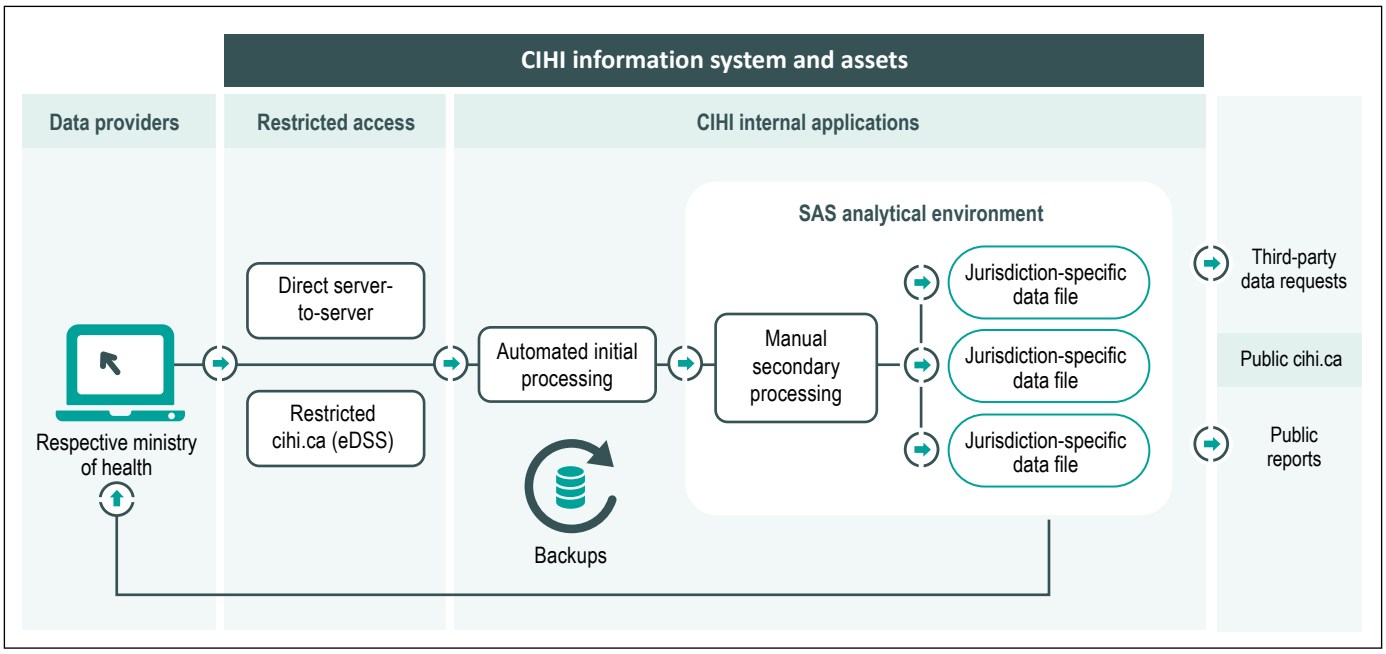
Once data has been successfully submitted, processed and stored in the PLPB Repository, a complete copy of the PLPB data set is then uploaded to CIHI's SAS analytical environment, where it is made available to approved CIHI staff for CIHI's purposes. Staff are able to access PLPB data through CIHI's SAS analytical environment, which is managed through a centralized SAS data access process in alignment with CIHI's policies for data access.

CIHI returns PLPB data to the data provider that originally supplied the data, as well as the respective ministry. CIHI also discloses aggregate and record-level data to third-party requesters and aggregate data to the public.

Copies of CIHI data and applications are retained on backup systems.

All the PLPB Repository data flows are highlighted in the figure below.

**Figure** Overview of the data flows for the Patient-Level Physician Billing Repository



# 3 Privacy analysis

## 3.1 Privacy and security risk management program

Privacy and security risk management is a formal, repeatable process for identifying, assessing, treating and monitoring risks in order to minimize the probability of such risks materializing and/or their impact should they occur. In 2015, CIHI approved its *Privacy and Security Risk Management Framework* and implemented the associated *Policy on Privacy and Security Risk Management*. CIHI's chief privacy officer and chief information security officer, in collaboration with senior managers, are responsible for identifying, assessing, treating, monitoring and reviewing privacy and security risks.

Privacy and security risks may be identified from a variety of sources, including PIAs. Once identified, risks are entered into the Privacy and Security Risk Register and categorized as **high**, **medium** or **low**, based on the likelihood and impact of a risk event:

- **High:** High probability of risk occurring, and/or controls and strategies are not reliable or effective;
- **Medium:** Medium probability of risk occurring, and/or controls and strategies are somewhat reliable or effective; or
- **Low:** Low probability of risk occurring, and/or reliable, effective controls and strategies exist.

The likelihood and impact of the identified risk are used to create a risk score. The risk assessment score of low, medium or high defines the seriousness of a risk. A higher risk ranking indicates a more serious threat and a greater imperative for treatment. Once an initial risk treatment is applied, the residual risk (the new calculation of the likelihood and impact of the risk, given the treatment) is assessed and compared against CIHI's privacy and security risk tolerance statement, which indicates that CIHI's privacy and security risk tolerance is low. If the risk score for the residual risk is still greater than low, additional risk treatment is necessary until the risk is low or the untreated/residual risk is accepted by CIHI's Executive Committee on behalf of the corporation.

There were no privacy and security risks identified as a result of this PIA.

# 3.2 Authorities governing Patient-Level Physician Billing Repository data

## General

CIHI adheres to its *Privacy Policy, 2010* and to any applicable privacy legislation and/or legal agreements.

## Privacy 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 and territories have enacted health information–specific privacy legislation: Newfoundland and Labrador, Prince Edward Island, Nova Scotia, New Brunswick, Ontario, Manitoba, Saskatchewan, Alberta, Yukon and the Northwest Territories. Health information–specific privacy legislation authorizes facilities to disclose personal health information without patient consent for the 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.

In 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

At CIHI, PLPB data is governed by CIHI's *Privacy Policy, 2010*, by legislation in the jurisdictions and by 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.

# 3.3 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 Committee, 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 PLPB data in terms of privacy and security risk management:

**Table 1** Key positions and responsibilities

| Position/group | Roles/responsibilities |
|---|---|
| Vice president, Data Strategies and Statistics | Responsible for the overall operations and strategic direction of the PLPB Repository |
| Director, Pharmaceuticals and Health Workforce Information Services | Responsible for strategic and operational decisions about the PLPB Repository |
| Manager, Physician Information | Responsible for ongoing management and uptake of the PLPB Repository; makes day-to-day operational decisions about the PLPB Repository |
| Chief information security officer | Responsible for the strategic direction and overall implementation of CIHI's Information Security Program |
| Executive director, chief privacy officer and general counsel | Responsible for the strategic direction and overall implementation of CIHI's Privacy Program |
| Manager, Infrastructure Business Operations | Responsible for ensuring that technical requirements are met for web-based submission and initial processing, including encryption of original jurisdiction-issued health care numbers prior to transferring PLPB data files into CIHI's SAS analytical environment |

## 3.4 Principle 2: Identifying purposes for personal health information

CIHI's mandate is to deliver comparable and actionable information to accelerate improvements in health care, health care system performance and population health across the continuum of care. This includes the following:

- Producing patient-focused analysis across the continuum of care (e.g., of age–sex- and morbidity-adjusted health care use by different populations);
- Developing comprehensive inpatient cost estimates that include physician costs, as well as other methodologies and tools to support analysis of health services; and
- Enhancing the quality of historical NPDB data and indicators (e.g., full-time equivalents, cost per service).

In order to fulfill these goals, CIHI collects the following types of PLPB data for the purposes indicated.

### Personal identifiers/demographic information

Examples include health care number, date of birth, postal code, service location indicator and sex. CIHI uses this information to develop a complete picture of the care provided to the individual by linking records describing the different types of care provided to the individual at different times by different facilities. In order to link the individual's records, CIHI needs to know which records pertain to the individual. Accordingly, all records must include some identifying information — especially the individual's health care number. To conduct demographic analyses of health care services and outcomes, CIHI uses age calculated using date of birth, geographic information derived from postal code and service location indicator, and sex.

### Physician identifiers/demographic and billing information

Examples include the unique physician identifier and referring physician identity number. Unique physician identifiers are generated by the home province/territory to uniquely identify a physician in Canada. CIHI uses physician identifiers to understand the demographic characteristics of physicians, physician payments and the physician services component of care delivered to individuals in Canada's health care systems. Examples of the types of physician information collected are physician age and gender, facility identifier, service location and postal code, service date, diagnostic code and fee code.

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

CIHI is a secondary collector of data and does not have direct contact with patients. CIHI relies on data providers to abide by and meet their data collection, use and disclosure rules and responsibilities, including those related to consent and notification, as outlined in jurisdiction-applicable laws, regulations and policies.

## 3.6 Principle 4: Limiting collection of personal health information

CIHI is committed to the principle of data minimization. Under sections 1 and 2 of CIHI's *Privacy Policy, 2010*, CIHI collects from data providers only the information that is reasonably required for health system uses, including statistical analysis and reporting, in support of the management, evaluation or monitoring of the health care system.

CIHI limits its collection of personal health information to that which is necessary to support authorized data quality and analytical activities. CIHI continues to develop the PLPB Repository in collaboration with ministries of health across Canada. Identifying the PLPB Repository information that will be collected from each province and territory will continue to be done on a jurisdiction-by-jurisdiction basis and will evolve over time.

As noted in Section 2.3, collection of PLPB data is not based on CIHI-issued mandatory file submission specifications, which normally set out strict and prescribed file layout constraints and variable specifications for data submissions. As such, there is a risk that a PLPB data provider may inadvertently submit more data than is required. CIHI will mitigate this risk in several ways.

First, CIHI has identified the minimum list of data elements required, and this is used to negotiate with each potential data provider to ensure that only the data necessary for purposes of the PLPB Repository is submitted.

Second, CIHI has a corporate de-identification process for encrypting health care numbers. During this process, if the structure of the file submitted to CIHI has changed in any way from what is expected (i.e., inclusion of additional information), then the corporate de-identification process will fail. Following this, Infrastructure Business Operations will notify the program area that something is wrong with the file and the program area will follow up with the provider to verify what was transmitted.

Third, CIHI staff have implemented additional procedures for manual review for unwanted data elements. This review takes place during secondary processing (see Section 2.3) of each PLPB data file, prior to transferring the file to the SAS analytical environment. If data elements not requested by CIHI are included in a submission, they will be deleted from the file at the secondary processing stage, and the respective jurisdiction will be notified to adjust future submission specifications. Data elements required for purposes of the PLPB Repository but not necessary for routine analytical activities in CIHI's SAS analytical environment are accessible only on an exceptional basis, subject to approval in compliance with CIHI's internal *Privacy Policy and Procedures, 2010*.

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

### Limiting use

#### Clients

CIHI limits the use of PLPB data to authorized purposes, as described in Section 3.4. These include comparative analyses within and among jurisdictions; trend analyses to assess and monitor the impact of differences in policy, practices and service delivery; and production of statistics to support planning, management and quality improvement.

#### CIHI staff

CIHI staff are 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. 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.

Staff access to the SAS analytical environment is provided through CIHI's centralized SAS data access process managed through CIHI's Service Desk. This environment is a separate, secure space for the storage of general use data and other analytical data files, where staff can conduct and store the outputs from their analytical work. The general use data files are pre-processed files that are designed specifically to support internal analytical users' needs; the pre-processing includes removing personal health information (e.g., unencrypted health care number) and privacy-sensitive variables (e.g., date of birth, full postal code), which are replaced by a set of standard derived variables (e.g., patient's full birth date is removed and a derived age variable is added).

The process ensures that all requests for access, including access to the PLPB data, are traceable and authorized, in compliance with Section 10 of CIHI's *Privacy Policy, 2010*. The SAS data access process is subject to an annual audit to ensure that staff are accessing data on a need-to-know basis. Section 3.9 includes additional information about how the various procedural and technical measures are deployed to prevent unauthorized access and to otherwise secure the PLPB data.

## Data linkage

Data linkages are performed between the PLPB data and other CIHI data sources. While this potentially causes greater risk of identification of an individual, CIHI undertakes mitigating steps to reduce the risks.

Sections 14 to 31 of CIHI's *Privacy Policy, 2010* govern linkage of records of personal health information. Pursuant to this policy, CIHI permits the linkage of personal health information under certain circumstances. Data linkage within a single data holding for CIHI's own purposes is generally permitted. Data linkage across data holdings for CIHI's own purposes and all third-party requests for data linkage are subject to an internal review and approval process. When carrying out data linkages, CIHI will generally do so using consistently encrypted health care numbers. The linked data remains subject to the use and disclosure provisions in the *Privacy Policy, 2010*.

Criteria for approval of data linkages are set out in sections 23 and 24 of CIHI's *Privacy Policy, 2010*, as follows:

Section 23 The individuals whose personal health information is used for data linkage have consented to the data linkage; or

Section 24 All of the following criteria are met:

a. The purpose of the data linkage is consistent with CIHI's mandate;
b. The public benefits of the linkage significantly offset any risks to the privacy of individuals;
c. The results of the data linkage will not be used for any purpose that would be detrimental to the individuals that the personal health information concerns;
d. The data linkage is for a time-limited specific project and the linked data will be subsequently destroyed in a manner consistent with sections 28 and 29; or
e. The data linkage is for purposes of an approved CIHI ongoing program of work where the linked data will be retained for as long as necessary to meet the identified purposes and, when no longer required, will be destroyed in a manner consistent with sections 28 and 29; and
f. The data linkage has demonstrable savings over other alternatives or is the only practical alternative.

### Client linkage standard

In 2015, CIHI implemented a corporate-wide client linkage standard to be used for the linkage of records created in 2010–2011 or later, where the records include the following data elements: encrypted health care number and the province/territory that issued the health care number. For the linkage of records that do not satisfy these criteria, the linkage mechanism is determined on a case-by-case basis.

### Destruction of linked data

Section 28 of CIHI's *Privacy Policy, 2010* sets out the requirement that CIHI will destroy personal health information and de-identified data in a secure manner, using destruction methodologies appropriate to the format, media or device such that reconstruction is not reasonably foreseeable.

Section 29 of CIHI's *Privacy Policy, 2010* further requires that for time-limited specific projects, the secure destruction of linked data will occur within 1 year after publication of the resulting analysis, or 3 years after the linkage, whichever is sooner, in a manner consistent with CIHI's *Destruction Standard*. For linked data resulting from an ongoing program of work, secure destruction will occur when the linked data is no longer required to meet the identified purposes, in a manner consistent with CIHI's *Destruction Standard*. These requirements apply to data linkages both for CIHI's own purposes and for third-party data requests.

### Return of own data

Upon request, CIHI will provide an organization with a copy of any data the organization submitted to the PLPB Repository as a return of own data. In addition to returning data to submitting organizations, Section 34 of CIHI's *Privacy Policy, 2010* establishes that CIHI may return records to the relevant ministry for data quality purposes and for purposes consistent with its mandate (e.g., for health services and population health management, including planning, evaluation and resource allocation). The return of own data is considered a use and not a disclosure.

## Limiting disclosure

### Third-party data requests

Customized record-level and/or aggregated data from the PLPB Repository may be requested by a variety of third parties.

CIHI administers the Third-Party Data Request Program, which establishes privacy and security controls that must be met by the recipient organization. Furthermore, as set out in sections 37 to 57 of CIHI's *Privacy Policy, 2010*, CIHI discloses health information in a manner consistent with its mandate and core functions, and CIHI's data disclosures are made at the highest degree of anonymity possible while still meeting the research and/or analytical purposes of the requester. This means that, whenever possible, data is aggregated. When aggregated data is not sufficiently detailed for the intended purpose, record-level de-identified data or personal health information (in limited circumstances, for example, with individual consent) may be disclosed to the recipient on a case-by-case basis, when the recipient has entered into a data protection agreement or other legally binding instrument with CIHI. Only those data elements necessary to meet the intended purpose may be disclosed.

CIHI uses a secure access environment (SAE) as the preferred means of record-level data access. CIHI's SAE is an encrypted, secure environment hosted in CIHI's data centre. Consistent with CIHI's existing policies and procedures, approved researchers — who are subject to stringent agreement terms — access data extracts that have been prepared and vetted by CIHI staff for an approved research project. Record-level data cannot be copied or removed from the SAE; only aggregate results can be extracted from the SAE. Further information about CIHI's SAE is available on CIHI's website (see the Make a data request web page and the *SAE Privacy Impact Assessment*).

Where CIHI has provided researchers and other approved users with access to record-level data by extracting the relevant data into files and sending the files to the users, CIHI has adopted a complete life cycle approach. As part of that life cycle, Privacy and Legal Services (PLS) has developed and is responsible for the ongoing compliance monitoring process whereby all data sets that are disclosed to third-party data recipients are tracked and monitored for secure destruction at the end of their life cycle. Prior to disclosing data, third-party recipients sign a data protection agreement and agree to comply with the conditions and restrictions imposed by CIHI relating to the collection, purpose, use, security, disclosure and return or disposal of data.

Data requesters are required to complete and submit a data request form. They must also sign an agreement wherein they agree to use the data for only the purpose specified. All data protection agreements with third parties specify that receiving organizations must keep record-level data strictly confidential and not disclose such data to anyone outside the organization. Moreover, CIHI imposes obligations on these third-party recipients, including

- Secure destruction requirements;
- CIHI's right to audit;
- Restriction on the publication of cell sizes less than 5; and
- Strong encryption technology that meets or exceeds CIHI's standards where mobile computing devices are used.

In addition to the ongoing compliance monitoring process, whereby all data sets that are disclosed to third-party data recipients are tracked and monitored for secure destruction at the end of their life cycle, PLS contacts third-party data recipients on an annual basis to certify that they continue to comply with their obligations as set out in the data request form and data protection agreement signed with CIHI.

### Public release

As part of its mandate, CIHI publicly releases aggregated data only in a manner designed to minimize any risk of re-identification and residual disclosure. This generally requires a minimum of 5 observations per cell in accordance with Section 33 of CIHI's *Privacy Policy, 2010*. Aggregated statistics and analyses are made available in publications and on CIHI's website.

### Limiting retention

The PLPB Repository forms 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.

## 3.8 Principle 6: Accuracy of personal health information

CIHI has a comprehensive data quality program. Any known data quality issues will be addressed by the data provider or documented in data limitations documentation, which CIHI makes available to all users.

Similar to other CIHI data holdings, the PLPB Repository is subject to a data quality assessment on a regular basis, based on *CIHI's Information Quality Framework*. The process of completing the framework includes numerous activities to assess the various dimensions of quality, including the accuracy of PLPB data.

## 3.9 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 enterprise 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 to provide an integrated view of the organization's information management practices. Key aspects of CIHI's system security with respect to PLPB data are highlighted below.

## 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 destruction. Accordingly, CIHI has a comprehensive suite of policies that specify 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 care number has been removed or encrypted upon first receipt. In exceptional instances, staff will require access to original health care numbers. 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 data as follows:

- Access to health care 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 access to 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 the mandatory Privacy and Security Training Program and through ongoing communications about CIHI's privacy and security policies and procedures. Employees attempting to access a CIHI information system must confirm, prior to each logon attempt, 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.

## 3.10 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* and *Privacy Policy, 2010* are available to the public on its corporate website (cihi.ca).

## 3.11 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 decisions affecting individuals. 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*.

## 3.12 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*, questions, concerns or complaints about CIHI's handling of 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 Conclusion

CIHI's assessment of the PLPB Repository did not identify any privacy or security risks.

This PIA will be updated or renewed in compliance with CIHI's *Privacy Impact Assessment Policy*.

# Appendix

**Text alternative for image**

Data collection by CIHI: Once authenticated through CIHI's access management system processes for granting and revoking access, PLPB data providers submit record-level data to CIHI through CIHI's secure web-based electronic Data Submission Services or other direct server-to-server options.

Internal data processing following collection by CIHI: PLPB data undergoes automated checks for file inconsistencies against jurisdiction-specific specifications, and the jurisdiction-issued health care number in each file is encrypted. Authorized internal staff perform additional processing before the files are transferred to CIHI's SAS analytical environment.

Backups: Copies of PLPB data are retained on backup systems.

CIHI return, disclosure and use of data: CIHI staff access data within the SAS analytical environment on a need-to-know basis, to return data to original data providers, fulfill third-party data requests and release aggregate statistics and analyses to the public.

help@cihi.ca

**CIHI Ottawa**
495 Richmond Road
Suite 600
Ottawa, Ont.
K2A 4H6
**613-241-7860**

**CIHI Toronto**
4110 Yonge Street
Suite 300
Toronto, Ont.
M2P 2B7
**416-481-2002**

**CIHI Victoria**
880 Douglas Street
Suite 600
Victoria, B.C.
V8W 2B7
**250-220-4100**

**CIHI Montréal**
1010 Sherbrooke Street West
Suite 602
Montréal, Que.
H3A 2R7
**514-842-2226**

cihi.ca

13929-0522