



Data
Discovery
Better Health

ICES

Report to the Information and Privacy
Commissioner of Ontario

Three-Year Review as a Prescribed Entity
under PHIPA

Submitted in 2020

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A. Introduction & Explanatory Note

This report has been prepared by ICES to support its request for continued approval of the Information and Privacy Commissioner of Ontario (IPC) under section 45(3) of Ontario's *Personal Health Information Protection Act, 2004* (PHIPA).

Our report demonstrates ICES' policies, procedures and practices to protect the privacy of individuals whose personal health information ICES collects under section 45(1) of PHIPA. It does so from three perspectives: Section B details the existence and sufficiency of the documentation required by Appendices A and B of the *Manual for the Review and Approval of Prescribed Persons and Prescribed Entities* (the "IPC Manual"). This is followed in Section C of our report by an assessment of the effectiveness of those policies, procedures and practices according to the indicators defined in Appendix C of the IPC Manual. Finally, we affirm the accuracy and completeness of this information through the affidavit of ICES' Chief Executive Officer.

Prepared by Michael Smith and Kelley A. Ross with oversight by Rosario Cartagena
and with contributions from members of ICES Privacy & Legal Office

B. Required Documentation

Part 1 – Privacy Documentation

1. Privacy Policy in Respect of its Status as a Prescribed Person or Prescribed Entity

| APPLICATION | | |
|--|---|-------------|
| Fully applicable <input checked="" type="checkbox"/> | Qualified application (<i>explain</i>) | |
| EXISTENCE & IMPLEMENTATION | | |
| ICES vehicles | Name | Status |
| | a. Privacy Policy | Implemented |
| | b. Privacy Information, Inquiries & Complaints Policy | Implemented |
| | c. Privacy Impact Assessment Policy | Implemented |
| | d. ICES PIA – New ICES Data Holding | Implemented |
| | e. ICES Project PIA Form | Implemented |
| | f. Website privacy information | Implemented |
| DESCRIPTION | | |
| <p>ICES' Privacy Policy establishes an overarching framework for ICES' collection, use and disclosure of personal health information, and ICES' approach to its protection.</p> <p><u>Status under the Act</u> ICES' Privacy Policy describes ICES' status as a prescribed entity under s. 18(1) of O. Reg. 329/04. The policy declares ICES' commitment to protect personal health information in accordance with PHIPA and its regulation. In addition, the policy confirms that ICES implements the required privacy and security policies, procedures and practices, and that these are subject to review and approval by the Information and Privacy Commissioner of Ontario every three years. The policy also acknowledges ICES' responsibility for the handling of personal health information by its agents, and requires ICES to provide training to agents to enable their compliance.</p> <p><u>Privacy & Security Accountability Framework</u> ICES' Privacy Policy articulates an accountability framework for ensuring compliance with PHIPA and its regulation, and with the privacy and security policies, procedures and practices ICES implements to maintain its designation as a prescribed entity. Under the framework, ICES' Chief Executive Officer:</p> <ul style="list-style-type: none"> • Has ultimate responsibility for ensuring compliance with PHIPA and its regulation and ICES' privacy and security policies, procedures and practices as a prescribed entity; • Must appoint a Chief Privacy and Legal Officer and delegate to that person authority for day-to-day management of privacy and security at ICES, including responsibility for putting in place policies, procedures and practices to prevent, detect and respond to privacy and security breaches; and • Is required to make an annual report of privacy breaches and complaints, as well as privacy audits and privacy impact assessments to the Finance, Audit and Risk Committee of ICES' Board of Directors. <p><u>Collection of Personal Health Information</u> ICES' Privacy Policy identifies the purposes for which personal health information is collected, the types of personal health information collected and its sources. The policy also articulates ICES' commitment to ensuring collection is in accordance with PHIPA and its regulation, and limited to that which is reasonably necessary to, and avoided where other information will, serve the purpose. ICES' Privacy Impact Assessment Policy, which is referenced in the Privacy Policy, stipulates that a privacy impact assessment must be conducted by an ICES Privacy subject matter expert (SME) prior to collection. Assessment of the amount and type of personal health information collected, which must be justified, is specifically provided for in templates used to conduct privacy impact assessments under that policy. The Privacy Policy requires the Chief Privacy and Legal Officer to ensure publication of a list of ICES data holdings on ICES' public website, together with a mechanism to allow individuals to request more detailed information. The list of specific ICES' data holdings is both very long and very dynamic, and for this reason the list itself does not form part of ICES' Privacy Policy.</p> <p><u>Use of Personal Health Information</u> ICES' Privacy Policy identifies the purposes for which personal health information is used. Personal health information may be used for the purposes of health system analysis and evaluation and research conducted within ICES, and preparing information for disclosure to external researchers. In all cases, use must be in accordance with PHIPA and its regulation and, where applicable, research ethics board approvals. The policy clearly provides that agents who conduct health system evaluation and research within ICES are permitted to use "coded" information only. Coded information is personal health information from which direct personal identifiers, such as names and health card numbers, have been either removed or replaced by a confidential ICES identifier or "code." The policy</p> | | |

also stipulates that requests to use such information are subject to a privacy impact assessment conducted by an ICES Privacy SME. The template developed for this purpose under ICES' Privacy Impact Assessment Policy is specifically designed to limit the information made available for these purposes to what is reasonably necessary and in the least sensitive form required.

Disclosure of Personal Health Information

ICES' Privacy Policy limits disclosure of personal health information to disclosures to three scenarios: (1) disclosures to other prescribed entities and prescribed registries; (2) disclosures of risk-reduced coded datasets to external researchers; and (3) to define cohorts for external researchers for the purpose of publicly funded research that cannot be reasonably conducted within ICES.

Risk-reduced coded data is coded data that has been assessed for the identifiability of any underlying individuals and adjusted, as required, until the level of identifiability is low. Disclosures are made only as permitted by PHIPA and section 18(4) of its regulation and data sharing agreements, and verified through a privacy impact assessment. Conducted by ICES Privacy SMEs, privacy impact assessments are designed to ensure that ICES discloses personal health information only where other information will not serve the purpose, and discloses no more personal health information than is reasonably necessary. For disclosures of risk-reduced coded data, external researchers are permitted to access the datasets ICES prepares for them only on a secure ICES desktop. Cohort disclosures are limited to the minimum variables – including direct and indirect personal identifiers – necessary to identify a study population externally. Once confirmed, cohort lists are securely transferred in accordance with the cohort disclosure service agreement. Disclosure of personal health information is not permitted in any other scenario. Instead, the policy permits disclosure of de-identified information only to external researchers for retention outside the ICES desktop, to knowledge users and in publications. In each case, permission to disclose is subject to a review of the data to determine the information could not, in any reasonably foreseeable circumstance, be used, either alone or in combination with other information, to identify an individual.

Secure Retention, Transfer & Disposal of Records of Personal Health Information

ICES' Privacy Policy addresses the secure retention, transfer and disposal of personal health information in both paper and electronic format. Personal health information with direct personal identifiers is retained only temporarily. It is isolated in secure network folders and cabinets until data quality issues have been resolved, and is then securely destroyed by an ICES-approved method, such as cross-cut shredding for paper or secure wiping or physical destruction for media and devices. ICES also protects personal health information in transit. Protections include an encrypted file transfer system that is used for inbound and outbound electronic file transfers, and a requirement to remove direct personal identifiers before transferring paper.

Implementation of Administrative, Technical & Physical Safeguards

ICES' Privacy Policy outlines some of the administrative, technical and physical safeguards ICES implements to protect personal health information it receives against theft, loss and authorized use and disclosure and to maintain confidentiality of the information. The safeguards outlined include restrictions on access that protect personal health information against unauthorized copying, modification or disposal. Agents who conduct health system and analysis and evaluation or health-related research are permitted to access coded information, and external researchers are permitted to access risk-reduced coded data only.

Inquiries, Concerns & Complaints Related to Information Practices

ICES' Privacy Policy requires ICES to establish processes to allow individuals to make inquiries and complaints about ICES' privacy policies, procedures and practices as a prescribed entity, and to comply with PHIPA and its regulation. The Chief Privacy and Legal Officer is responsible for establishing and implementing procedures for the receipt and handling of privacy inquiries and complaints by ICES Privacy SMEs. The Chief Privacy and Legal Officer is also required to ensure instructions, including contact information, are published on ICES' public website. The information published on ICES' public website must include instructions that inquiries, concerns and complaints about ICES' privacy practices may be addressed to the Chief Privacy and Legal Officer directly, both verbally and in writing, and includes a mailing address and other contact information to enable this. The website must also include a statement that individuals may direct complaints regarding ICES' compliance with its obligations as a prescribed entity to the Information and Privacy Commissioner of Ontario, and associated mailing address and contact information.

Transparency of Practices in Respect of Personal Health Information

ICES' Privacy Policy requires ICES to publish information about its privacy practices on its website and establish processes to allow individuals to obtain further information about its privacy policies, procedures and practices as a prescribed entity. ICES' Chief Privacy and Legal Officer is responsible for fulfillment of both requirements, which are also elaborated under ICES' Privacy Information, Inquiries and Complaints Policy.

2. Policy & Procedures for Ongoing Review of Privacy Policies, Procedures & Practices

| | | |
|---|---|---------------|
| APPLICATION | | |
| Fully applicable <input checked="" type="checkbox"/> | Qualified application (<i>explain</i>) | |
| EXISTENCE & IMPLEMENTATION | | |
| ICES vehicle(s) | Name | Status |
| | a. Internal Audit Policy | Implemented |
| | b. Privacy Audit Procedure | Implemented |
| | c. Privacy Monitoring Log & Report Forms Workbook | Implemented |
| | d. Policy Framework & Governance Policy | Implemented |
| | e. Discipline & Corrective Action Policy | Implemented |
| DESCRIPTION | | |
| <p>ICES' Internal Audit Policy provides for continuous monitoring of ICES' privacy policies, procedures and practices. The purpose of monitoring is to detect when existing policies, procedures and practices require amendment and when new policies, procedures and practices are required to meet ICES' obligations as a prescribed entity.</p> <p>The Chief Privacy and Legal Officer is responsible for putting in place a monitoring program to identify and address the implications of the following as they occur:</p> <ul style="list-style-type: none"> • Relevant regulatory changes and guidance, including any orders, fact sheets and best practices issued by the Information and Privacy Commissioner of Ontario under PHIPA and its regulation; • Changes to relevant industry standards; • Risks identified through privacy impact assessments; • Deficiencies identified through audits; • Inconsistencies between and among privacy and security policies, procedures and practices and between them and ICES' actual practices; and • Investigations into privacy incidents, breaches and complaints about ICES' privacy practices. <p>The policy and Privacy Audit Procedure, which the Chief Privacy and Legal Officer is responsible for putting in place, provide for:</p> <ul style="list-style-type: none"> • A review of every privacy policy and their associated procedures and practices against all of the above prior to each scheduled review of ICES' policies, procedures and practices by the IPC pursuant to section 45(4) of PHIPA; • Searches of relevant external websites and databases and of ICES' records to identify the changes, risks, deficiencies and inconsistencies listed above in support of the review; • The procedure and timeframe for undertaking the review; • The form, content and supporting evidence that must be generated to document the review; • The procedure for identifying, and taking steps to address, any need to amend or supplement ICES' privacy policies, procedures and practices identified through the review; and • Assignment of ICES' Privacy SMEs or qualified third parties to conduct the reviews. <p>ICES' Policy Framework and Governance Policy governs the revision, creation and communication of policies, procedures and practices at ICES, including ICES' Internal Audit Policy. In accordance with ICES' Policy Framework and Governance Policy, the Chief Privacy and Legal Officer is responsible for the creation, revision and communication of any changes to ICES' privacy policies, procedures and practices, including ICES' Internal Audit Policy. The Policy Framework and Governance Policy stipulates that changes must be communicated both to agents through ICES' intranet and to the public.</p> <p>Specifically, the Policy Framework and Governance Policy dictates the procedure for identifying a requirement for a new or revised policy and/or procedure, which includes identification of the need to ICES' Operations Committee. In accordance with procedures set out in ICES' Change Management Procedure, new or revised policies and/or procedures that affect general ICES operations or that require broader communications undergo Operations Committee review, as well as review by ICES' satellite sites for network-wide policies and/or procedures. Lastly, new or revised policies and/or procedures require review and approval by ICES' Change Advisory Board (CAB).</p> <p>Compliance with the above policies, procedures and practices is mandatory for all agents. Agents must notify an ICES Privacy SME at the first reasonable opportunity if they breach, or believe there has been a breach of, the policies or procedures, in accordance with ICES' Privacy Incident Management Policy. Violations, including</p> | | |

breaches, are subject to a range of disciplinary actions, including warning, temporary or permanent loss of access privileges, legal sanctions and termination of employment or contract with ICES. Disciplinary actions are enforced by ICES' Director, Human Resources in consultation with ICES' Chief Privacy and Legal Officer under ICES' Discipline and Corrective Action Policy. Compliance is subject to annual audit by an ICES Privacy SME and an audit schedule established under ICES' Internal Audit Policy.

3. Policy on the Transparency of Privacy Policies, Procedures & Practices

| APPLICATION | | |
|---|---|-------------|
| Fully applicable <input checked="" type="checkbox"/> | Qualified application (<i>explain</i>) | |
| EXISTENCE & IMPLEMENTATION | | |
| ICES vehicle(s) | Name | Status |
| | a. Privacy Policy | Implemented |
| | b. Privacy Information, Inquiries & Complaints Policy | Implemented |
| | c. Privacy Statement | Implemented |
| | d. Website Privacy FAQ | Implemented |
| DESCRIPTION | | |
| <p>ICES' Privacy Policy and Privacy Information, Inquiries and Complaints Policy require ICES to publish information about its data holdings and privacy policies, procedures and practices on its public website. Information that must be published on ICES' public website includes:</p> <ul style="list-style-type: none"> ICES' Privacy Policy; Frequently asked questions related to ICES' privacy policies, procedures and practices; Documentation related to ICES' most recent review under s.45(3) of PHIPA by the Information and Privacy Commissioner of Ontario; An overview of key administrative, technical and physical safeguards to protect privacy and prevent privacy breaches; A list of ICES' data holdings; and Instructions, including the title, mailing address and contact information, for making inquiries and complaints about ICES' privacy policies, procedures and practices and compliance with PHIPA and its regulation. <p>The Privacy Information, Inquiries and Complaints Policy requires publication of a brochure or frequently asked questions, which, at a minimum, must address:</p> <ul style="list-style-type: none"> The types of personal health information in ICES data holdings, and their sources; The purposes for which personal health information is collected; The purposes for which personal health information is used; and The circumstances under which and the purposes for which ICES discloses personal health information, and the persons or organizations to which it is typically disclosed. <p>Under the policies, ICES' Chief Privacy and Legal Officer is responsible for ICES' compliance with the above requirements.</p> | | |

4. Policy & Procedures for the Collection of Personal Health Information

| APPLICATION | | |
|--|---|-------------|
| Fully applicable <input checked="" type="checkbox"/> | Qualified application (<i>explain</i>) | |
| EXISTENCE & IMPLEMENTATION | | |
| ICES vehicle(s) | Name | Status |
| | a. Collection of Personally Identifiable Information Policy | Implemented |
| | b. Collection of Personally Identifiable Information Procedures | Implemented |
| | c. Privacy Policy | Implemented |
| | d. ICES PIA Form – New ICES Data Holding | Implemented |
| | e. ICES Project PIA Form | Implemented |

| | | |
|--|--|-------------|
| | f. Internal Audit Policy | Implemented |
| | g. Discipline & Corrective Action Policy | Implemented |
| | h. Privacy Incident Management Policy | Implemented |

DESCRIPTION

ICES' Privacy Policy identifies the purposes for which ICES collects personal health information, its nature, and from whom. Key collection purposes identified in the policy include health system analysis and evaluation, conducted by ICES independently or on behalf of policy-makers and health care providers, and research conducted by ICES scientists and others under the oversight of a research ethics board. Health information custodians like hospitals, other prescribed entities, prescribed registries and researchers are identified as the sources. All disclose personal health information to ICES.

ICES' Privacy Policy and Collection of Personally Identifiable Information Policy both articulate ICES' commitment to collect personal health information only in accordance with PHIPA and its regulation, to collect personal health information only where other information will not serve the purpose, and to collect no more personal health information than is reasonably necessary to meet the purpose.

Compliance with ICES' Privacy Policy and these procedures is mandatory for all agents. Agents must notify an ICES Privacy SME at the first reasonable opportunity if they breach, or believe there has been a breach of, the policy or procedures, in accordance with ICES' Privacy Incident Management Policy. Violations including breach are subject to a range of disciplinary actions, including warning, temporary or permanent loss of access privileges, legal sanctions and termination of employment or contract with ICES. Disciplinary actions are enforced by ICES' Director, Human Resources in consultation with ICES' Chief Privacy and Legal Officer under ICES' Discipline and Corrective Action Policy. Compliance is subject to annual audit by an ICES Privacy SME and an audit schedule established under ICES' Internal Audit Policy.

Review & Approval Process

The Collection of Personally Identifiable Information Policy stipulates that any agent who wishes to collect personal health information must ask ICES' Privacy and Legal Office to conduct a privacy impact assessment. Assessments, which are conducted by an ICES Privacy SME in consultation with the requestor, must be completed to authorize the collection. The assessments are conducted against templates developed by ICES' Privacy and Legal Office under ICES' Privacy Impact Assessment Policy. The templates are designed to ensure that:

- The collection is permitted by PHIPA and its regulation;
- All conditions or restrictions in PHIPA and its regulation are satisfied;
- Other information, such as de-identified or aggregate information, will not serve the purpose; and
- No more personal health information is collected than is reasonably necessary for the identified purpose.

Conditions or Restrictions on Approval

ICES' privacy impact assessment templates, which are defined and mandatory, are the vehicle used to address and document each of the requirements listed above, and communicate the results. Requestors receive a copy of the completed assessment, which includes a decision to approve or deny the collection, as well as any conditions that must be met. These include requirements to establish a data sharing agreement prior to collection in all cases where personal health information is being collected. These requirements are supported in the Collection of Personally Identifiable Information Procedures. The procedures define the process for obtaining approvals and establishing data sharing agreements. ICES' Contracts Specialist is responsible for establishing data sharing agreements, consulting with an ICES Privacy SME as necessary, and for alerting ICES' Data Covenantors when agreements are in place and collection may therefore proceed.

Secure Retention, Transfer & Return or Disposal

The policy specifically requires that personal health information, once collected, be retained, transferred and returned or disposed of in accordance with ICES policies, procedures and practices on these topics. These are described in 2(5), 2(7) and 2(8) in Part 2 of Section B of this report.

5. List of Data Holdings Containing Personal Health Information

| | | |
|---|-------------------------------------|--|
| APPLICATION | | |
| Fully applicable | <input checked="" type="checkbox"/> | Qualified application (<i>explain</i>) |
| EXISTENCE & IMPLEMENTATION | | |
| ICES vehicle(s) | Name | Status |
| | a. ICES Data Dictionary | Implemented |
| DESCRIPTION | | |
| ICES has developed and maintains an up-to-date list and brief description of ICES' data holdings, which is published on ICES' public website. | | |

6. Policy & Procedures for Statements of Purpose for Data Holdings Containing Personal Health Information

| APPLICATION | | |
|--|---|-------------|
| Fully applicable <input checked="" type="checkbox"/> | Qualified application (<i>explain</i>) | |
| EXISTENCE & IMPLEMENTATION | | |
| ICES vehicle(s) | Name | Status |
| | a. ICES DSA (HIC) | Implemented |
| | b. ICES DSA (Researcher) | Implemented |
| | c. Collection of Personally Identifiable Information Procedures | Implemented |
| | d. Collection of Personally Identifiable Information Policy | Implemented |
| | e. Privacy Impact Assessment Policy | Implemented |
| | f. Internal Audit Policy | Implemented |
| | g. Discipline & Corrective Action Policy | Implemented |
| | h. Privacy Incident Management Policy | Implemented |
| | i. ICES PIA Form – New ICES Data Holding | Implemented |
| | j. ICES Project PIA Form | Implemented |
| DESCRIPTION | | |
| <p>ICES' Collection of Personally Identifiable Information Policy and associated procedure set out the requirements for generating, reviewing, amending and approving statements of purpose for data holdings containing personal health information. The policy requires ICES to generate a statement of purpose each time it collects information for inclusion as an ICES data holding. Statements of purpose must identify the purpose of the collection, as well as the personal health information involved, its source, and the need for it.</p> <p>Under the policy, any agent who wishes to collect personal health information for an ICES data holding must ask ICES' Privacy and Legal Office to conduct a privacy impact assessment. Assessments, which are conducted by an ICES Privacy SME in consultation with, and signed off by, the requestor, are required to generate an approved statement of purpose. ICES' Contracts Specialist or an ICES Privacy SME, as applicable, must then ensure that the approved statement of purpose is reviewed by the person or organization from whom the personal health information will be collected and incorporated into a data sharing agreement, which must be in place prior to collection. Under the policy, the statement of purpose must be amended, by repeating these procedures, prior to undertaking any activity that is inconsistent with the statement of purpose as approved.</p> <p>The accuracy and currency of statements of purpose are verified on an ongoing basis as well as through annual audits. Permission to use any data holding is subject to review and approval by an ICES Privacy SME. Conducted using an ICES Project PIA Form, the review must confirm that the proposed use is in accordance with the statement of purpose. Annual audits are conducted by an ICES Privacy SME, and are required under ICES' Internal Audit Policy. Where inaccuracies are discovered through an audit, these must be corrected by following the procedures for amendment described above.</p> <p>Compliance with the above policies, procedures and practices is mandatory for all agents. Agents must notify an ICES Privacy SME at the first reasonable opportunity if they breach, or believe there has been a breach of, the policies or procedures, in accordance with ICES' Privacy Incident Management Policy. Violations including breach are subject to a range of disciplinary actions including warning, temporary or permanent loss of access privileges, legal sanctions and termination of employment or contract with ICES. Disciplinary actions are enforced by ICES' Director, Human Resources in consultation with ICES' Chief Privacy and Legal Officer under ICES' Discipline and Corrective Action Policy. Compliance is subject to annual audit by an ICES Privacy SME and an audit schedule established under ICES' Internal Audit Policy.</p> | | |

7. Statements of Purpose for Data Holdings Containing Personal Health Information

| | | |
|---|---|---------------|
| APPLICATION | | |
| Fully applicable <input checked="" type="checkbox"/> | Qualified application (<i>explain</i>) | |
| EXISTENCE & IMPLEMENTATION | | |
| ICES vehicle(s) | Name | Status |
| | a. ICES DSA (HIC) | Implemented |
| | b. ICES DSA (Researcher) | Implemented |
| | c. ICES Data & Analytic Services Agreement – Research (various) | Implemented |
| DESCRIPTION | | |
| <p>ICES generates a statement of purpose each time it collects personal health information for inclusion as an ICES data holding. Statements of purpose, are incorporated into, and form part of, data sharing agreements and research agreements with individuals and organizations who disclose personal health information to ICES. The statements of purpose identify the purpose of the data holding, as well as the personal health information involved, its source, and the need for the information in relation to the identified purpose.</p> | | |

8. Policy & Procedures for Limiting Agent Access to & Use of Personal Health Information

| | | |
|--|---|---------------|
| APPLICATION | | |
| Fully applicable <input checked="" type="checkbox"/> | Qualified application (<i>explain</i>) | |
| EXISTENCE & IMPLEMENTATION | | |
| ICES vehicle(s) | Name | Status |
| | a. Protection of ICES Data Policy | Implemented |
| | b. Contracts Database | Implemented |
| | c. ICES Confidentiality Agreement (General) | Implemented |
| | d. ICES Confidentiality Agreement (Data Covenantor) | Implemented |
| | e. ICES Confidentiality Agreement (Abstractor) | Implemented |
| | f. ICES Collaborating Researcher NDA | Implemented |
| | g. ICES Project PIA Form | Implemented |
| | h. Privacy Impact Assessment Policy | Implemented |
| | i. ICES PIA – New Data Holding Form | Implemented |
| | j. Termination of Employment/Resignation & Discharge Policy | Implemented |
| | k. Research Analytics Environment (RAE) Procedures | Implemented |
| | l. Management of Data Covenantors Procedure | Implemented |
| | m. Abstractor Onboarding & Offboarding Procedure | Implemented |
| n. Data Covenantor Log | Implemented | |
| o. Log of ICES Abstractors | Implemented | |
| p. ICES Project PIA Log | Implemented | |
| q. Dataset Creation Plan Template (various) | Implemented | |
| r. Privacy Incident Management Policy | Implemented | |
| s. Discipline & Corrective Action Policy | Implemented | |
| t. Internal Audit Policy | Implemented | |
| DESCRIPTION | | |
| <p>ICES' Protection of ICES Data Policy limits access to and use of personal health information by agents on a need-to-know basis. The policy ensures that agents access and use the least identifiable information and the minimum amount required for their role. ICES also ensures that any agents granted access to and use of personal health information may disclose such personal health information only as permitted by PHIPA and its Regulation.</p> <p>Under the policy, only ICES Data Covenantors and ICES Abstractors are permitted to handle personal health information with direct personal identifiers. These are the agents responsible for collecting personal health information at ICES. Agents who conduct health system analysis and evaluation, and link information in ICES data holdings for those purposes, are permitted to access "coded" information only. Coded information is personal health information from which</p> | | |

direct personal identifiers, such as names and health card numbers, have been removed or replaced with a confidential code by an ICES Data Covenantor.

The extent of access to coded information is then subject to access levels and permissions, which are based on need. ICES analytic staff, who create project datasets, require and therefore have access to ICES data holdings; others on the project team are permitted to access and use project datasets only, subject to their assigned level of access and approval to participate in the project. For example, an epidemiologist may have access to a version of a project dataset that contains year of birth and the first three digits of the postal code; those variables will not be present in the version used by the investigator. Analytic staff are responsible for making these adjustments to the project datasets they create. And, under the policy, investigators who are not ICES scientists – called ICES collaborating researchers – are permitted to receive aggregate data only.

All agents are prohibited from accessing and using personal health information if other information, such as de-identified or aggregate information, will serve the purpose, and from using more personal health information than is necessary for the purpose. Agents are also prohibited from using coded or other information, alone or in combination, to identify any individual. This includes attempting to decrypt information that is encrypted, attempting to identify an individual based on unencrypted information and attempting to identify an individual based on prior knowledge. This prohibition is reinforced through ICES' confidentiality and non-disclosure agreements and conditions enforced through the ICES Project PIA Form, which is used to request and document approval to conduct projects at ICES.

Review & Approval Process

Under the Protection of ICES Data Policy, permission to access or use personal health information is subject to a privacy impact assessment. Privacy impact assessments are conducted by ICES Privacy SMEs under ICES' Privacy Impact Assessment Policy.

Permission for an ICES Data Covenantor to collect and use personal health information for the purposes of establishing or maintaining an ICES data holding is provided in an ICES PIA Form – New Data Holding. The process for requesting a privacy impact assessment in this scenario and the requirements that must be satisfied are set out in Part 1(4) of Section B of this report.

All other permissions to access and use personal health information for purposes other than research are provided in the ICES Project PIA Form. Submitted to ICES' Privacy and Legal Office by the principal investigator for the project, the ICES Project PIA Form defines the requirements and documentation that must be satisfied in requesting, reviewing and determining whether, and on what basis, permission to use personal health information is granted. To approve, the ICES Privacy SME must be satisfied that:

- The request to access and use personal health information is permitted by PHIPA and its regulation;
- The project objectives cannot be reasonably accomplished without the personal health information;
- The project objectives cannot be accomplished with de-identified and/or aggregate information; and
- No more personal health information will be accessed and used than is necessary to achieve the objectives of the project.

These determinations are supported by a warranty from the principal investigator, which has been confirmed by their program leader, that the personal health information is relevant and required. Further, in all cases permission is granted subject to the condition that a more granular dataset creation plan must be established jointly by the principal investigator, or the responsible ICES scientist if the principal investigator is not a full-status ICES scientist, and ICES analytic staff prior to creation of the project dataset, and align to the project objectives approved in the ICES Project PIA Form.

Once finalized, the ICES' Privacy and Legal Administrator sends the approved ICES Project PIA Form to the principal investigator for the project and uploads a copy to a network folder, where it is accessible to ICES' Data Covenantors and analytic staff.

Conditions & Restrictions on Approval

Again, the Protection of ICES Data Policy establishes the purposes for, and conditions under which, each category of ICES agent is permitted to access and use personal health information. Under the policy, permission for access and use of personal health information is for, and for as long as required for, those purposes.

The need for access is monitored and managed through the Research Analytics Environment (RAE) Procedures. The procedures provide for annual review of access to project folders, and removal of access that is no longer required. This is reinforced by provisions in confidentiality agreements, which must be signed by every agent under ICES' Privacy Awareness and Training Policy. By signing, agents agree to access and use personal health information only:

- As necessary for their role;
- If other information will not serve the purpose; and
- To the extent reasonably necessary for the purpose.

The agreements also require agents to acknowledge and agree that they are not permitted to disclose personal health information. The exception is ICES Data Covenantors, who are responsible for disclosures, subject to the policies, procedures and practices described in Part 1(12) of Part B of this report.

Notification & Termination of Access & Use

A policy is in place to provide notification and terminate access and use when an agent is no longer employed by ICES or requires access. ICES' Termination of Employment/Resignation and Discharge Policy addresses notification and termination of access and use of personal health information at the end of employment. Under the policy, employees are required to notify their supervisor in writing of their intention to resign. Within 24 hours of receipt, the supervisor is required to forward the written notice to a member of ICES' Human Resources staff, who is required to provide written notification to ICES' IT Department and ICES' Facility Manager. The notice alerts those groups of the need to secure computer files and terminate access to ICES systems and facilities, and the timeframe for doing so. There are distinct procedures that govern the process for terminating access when an ICES Data Covenantor transitions to a different role or an ICES Abstractor's assignment concludes. The Management of Data Covenantors Procedure requires the immediate supervisor to submit a request form to the Director of ICES Data Quality and Information Management, who must then send a ticket that instructs ICES' Information Systems to remove access. Under the Abstractor Onboarding and Offboarding Procedures, the research coordinator responsible for the ICES Abstractor sends the ticket, triggering removal of access and recovery of any IT equipment.

Secure Retention & Disposal

Under the Protection of ICES Data Policy all permission to access or use personal health information is subject to the policies, procedures and practices governing secure retention and disposal that are described in 2(5) and 2(8) in Part 2 of Section B of this report.

Tracking Approved Access to & Use of Personal Health Information

ICES tracks approved access to and use of personal health information. Four logs and one form are maintained. The Director of ICES' Data Quality and Information Management maintains the Data Covenantor Log, which lists approved ICES Data Covenantors. ICES' Data Quality and Information Management staff maintain the Contracts Database, which tracks actual access and use of personal health information by ICES Data Covenantors. Project managers are required to maintain a log of ICES Abstractors, which identifies any abstractors and the scope, purpose and duration of their approval to access personal health information for the association project. Finally, the Privacy and Legal Administrator maintains the ICES Project PIA Log, which captures the names of all agents authorized to access and use personal health information for specific projects. The ICES Project PIA Log is supplemented with a list of project team members that is maintained as part of the Dataset Creation Plan, which must be established for every project.

Compliance, Audit & Enforcement

Compliance with the above policies, procedures and practices is mandatory for all agents. Agents must notify an ICES Privacy SME at the first reasonable opportunity if they breach, or believe there has been a breach of, the policies or procedures, in accordance with ICES' Privacy Incident Management Policy. Violations, including breach, are subject to a range of disciplinary actions including warning, temporary or permanent loss of access privileges, legal sanctions and termination of employment or contract with ICES. Disciplinary actions are enforced by ICES' Director, Human Resources in consultation with ICES' Chief Privacy and Legal Officer under ICES' Discipline and Corrective Action Policy. Compliance is subject to annual audit by an ICES Privacy SME and an audit schedule established under ICES' Internal Audit Policy.

9. Log of Agents Granted Approval to Access & Use Personal Health Information

| | | |
|--|---|---------------|
| APPLICATION | | |
| Fully applicable <input checked="" type="checkbox"/> | Qualified application (<i>explain</i>) | |
| EXISTENCE & IMPLEMENTATION | | |
| ICES vehicle(s) | Name | Status |
| | a. Contracts Database | Implemented |
| | b. ICES Abstractor Log | Implemented |
| | c. ICES Project PIA Log | Implemented |
| | d. Dataset Creation Plan Template (various) | Implemented |
| | e. DQIM Data Disclosure Log | Implemented |

| DESCRIPTION |
|--|
| <p>ICES maintains logs of agents granted approval to access and use personal health information. Together the logs capture:</p> <ul style="list-style-type: none"> • Agent name; • Data holding; • Type of access and use; • Start date; and • End date. <p>Please note, the DQIM Data Disclosure Log captures date of disclosure instead of start and end dates.</p> |

10. Policy & Procedures for the Use of Personal Health Information for Research

| APPLICATION | | |
|--|---|-------------|
| Fully applicable <input type="checkbox"/> | Qualified application (<i>explain</i>) ICES' Privacy Policy permits the use of personal health information for research. Part 1(10) therefore applies to ICES only up to the bolded sub-heading on page 31 of the IPC Manual. | |
| EXISTENCE & IMPLEMENTATION | | |
| ICES vehicle(s) | Name | Status |
| | a. Privacy Policy | Implemented |
| | b. Privacy Incident Management Policy | Implemented |
| | c. Discipline & Corrective Action Policy | Implemented |
| | d. Internal Audit Policy | Implemented |
| | e. Research Ethics Review Policy | Implemented |
| | f. Protection of ICES Data Policy | Implemented |
| | g. Privacy Impact Assessment Policy | Implemented |
| | h. ICES Project PIA Form | Implemented |
| | i. DAS Project Intake, Adjudication & Initiation Procedure | Implemented |
| | j. ICES Data & Analytic Services Agreement - Research | Implemented |
| | k. ICES Data & Analytic Services Agreement - Authorized Researcher Agreement | Implemented |
| | l. Privacy Awareness & Training Policy | Implemented |
| | m. ICES Confidentiality Agreement (General) | Implemented |
| | n. ICES Confidentiality Agreement (Data Covenantor) | Implemented |
| | o. ICES Confidentiality Agreement (Abstractor) | Implemented |
| | p. ICES Collaborating Researcher NDA | Implemented |
| | q. ICES Project PIA Log | Implemented |
| | r. DAS Projects Log | Implemented |
| | s. Contracts Database | Implemented |
| | t. Data Management Policy | Implemented |
| DESCRIPTION | | |
| <p>ICES' Privacy Policy identifies the scenarios in which personal health information may be used for research purposes. Personal health information may be used for the purposes of research conducted by ICES and for continuing ICES research commenced outside ICES. In addition, personal health information may be used to perform analysis requested by, and prepare datasets for disclosure to, external researchers. In all cases, this is subject to the general principle, also articulated in the policy, that ICES does not use personal health information if other information will serve the purpose or use more personal health information than is necessary for the purpose.</p> <p>Compliance with the privacy policy is mandatory for all agents. Agents must notify an ICES Privacy SME at the first reasonable opportunity if they breach, or believe there has been a breach of, the policy, in accordance with ICES' Privacy Incident Management Policy. Violations, including breach, are subject to a range of disciplinary actions, including warning, temporary or permanent loss of access privileges, legal sanctions and termination of employment or contract with ICES. Disciplinary actions are enforced by ICES' Director, Human Resources in consultation with ICES' Chief Privacy and Legal Officer under ICES' Discipline and Corrective Action Policy. Compliance is subject to annual audit by an ICES Privacy SME and an audit schedule established under ICES' Internal Audit Policy.</p> | | |

Circumstances in which use of Personal Health Information is Permitted

ICES Research Ethics Review Policy stipulates that ICES must obtain approval of a Research Ethics Board prior to commencing any ICES research. Use of personal health information for the purposes of externally-approved research must have the approval of the research ethics board that approved the research. These requirements are reinforced through the ICES Project PIA Form and the DAS Project Intake, Adjudication and Initiation Procedure, which guide the review and approval of research conducted inside ICES and external research, respectively.

Distinction between the Use of Personal Health Information for Research & Other Purposes

Both the Privacy Policy and the Research Ethics Review Policy explicitly distinguish between use of personal health information for research purposes and for the purposes of section 45 of PHIPA. This is reinforced in the ICES Project PIA Form. This is the form used to request and document permission to use personal health information for any project at ICES. Submitted to ICES' Privacy and Legal Office by the principal investigator for the project, the form must be reviewed and approved by an ICES Privacy SME. To do so, the ICES Privacy SME must identify and record on the form:

- Whether the use will be for a section 45 purpose or for research;
- Whether or not research ethics board approval is required; and
- Where research ethics board approval is required, identify any deficiencies in that approval, which need to be addressed in order for the project to proceed.

Review & Approval Process

Under the Protection of ICES Data Policy, permission to access or use personal health information for any project conducted within ICES is subject to a privacy impact assessment. Privacy impact assessments are conducted by ICES Privacy SMEs under ICES' Privacy Impact Assessment Policy, using the ICES Project PIA Form. Permission to use personal health information in support of external research is governed by the DAS Project Intake, Adjudication and Initiation Procedure.

The ICES Project PIA Form and DAS Project Intake, Adjudication and Initiation Procedure define the requirements and documentation that must be satisfied in requesting, reviewing and determining whether, and on what basis, permission to use personal health information for a research purpose is granted. In both scenarios, the ICES Privacy SME must be satisfied that:

- The request to access and use personal health information is permitted by PHIPA and its regulation;
- The proposed use of personal health information is reflected in a written research plan, which has been approved by a research ethics board in accordance with PHIPA and its regulation;
- A copy of the research ethics board approval is appended to the ICES Project PIA Form;
- The personal health information to be used is consistent with what has been approved;
- The research objectives cannot be accomplished with de-identified and/or aggregate information; and
- No more personal health information will be accessed and used than is necessary to achieve the research objectives.

In the case of research to be conducted within ICES, these determinations are supported by a warranty from the principal investigator, which has been confirmed by their program leader, that the personal health information is relevant and required. External research has been approved by a research ethics board. Further, in all scenarios permission is granted subject to the condition that a more granular dataset creation plan must be established jointly by the principal investigator, or the responsible ICES scientist if the principal investigator is not a full-status ICES scientist, and ICES analytic staff prior to creation of the project dataset, and align to the research objectives approved in the ICES Project PIA Form, or, in the case of external research, set out in the written research plan that has been approved by a research ethics board.

Once finalized, the ICES Privacy and Legal Administrator or the Privacy SME who reviews the documentation sends the approved ICES Project PIA Form to the principal investigator for the project and uploads a copy to a network folder, where it is accessible to ICES' Data Covenantors and analytic staff. In the case of external research, the DAS Research Program Manager uploads a copy of the signed services agreement to the Contracts Database and requests a billing number, which is the authority for analytic staff to begin work.

Conditions or Restrictions on the Approval

The ICES Project PIA Form and DAS Project Intake, Adjudication and Initiation Procedure are designed to ensure compliance with the requirements of section 44(6) (a) through (f) of PHIPA. They do so as follows: first, to approve, the ICES Privacy SME is required to verify compliance with:

- Any conditions specified in the written research plan; and
- Any data sharing agreement governing personal health information disclosed to ICES for the research.

Second, in submitting an ICES Project PIA Form for approval, the principal investigator has already formally accepted that the research will be subject to the terms and conditions identified on the form. External researchers are required to enter into a services agreement (in the case of the principal investigator) or confidentiality agreement. These stipulate that:

- Personal health information may be used only for the approved research objectives;
- Results must not be published in any form that could reasonably enable re-identification of any individual;
- Personal health information must not be disclosed except as required by law;
- No individual may be contacted; and
- Agents report breaches and suspected breaches to an ICES Privacy Officer at the first reasonable opportunity.

The Privacy SME responsible for delivering privacy orientation ensures the execution of Confidentiality Agreements by obtaining signed copies and providing them to the Privacy & Legal Administrator, who is then responsible for filing signed agreements and tracking their execution in ICES' Privacy & Security Awareness Log.

ICES' Privacy Incident Management Policy and procedures, in turn, require ICES to notify the person or organization who disclosed the information to ICES. Although the principal investigator has overarching responsibility for conduct of research, it should be noted that the same conditions are imposed through confidentiality agreements that are signed by every agent who participates.

Secure Retention, Return or Disposal

Personal health information used for research at ICES remains in ICES' custody and control at all times, subject to ICES' policies, procedures and practices for secure retention, return and disposal. To the extent these are inconsistent with what has been approved by a research ethics board, that inconsistency will be identified and addressed as part of the ICES Privacy SMEs review and approval.

Regarding secure retention, the ICES Data Management Policy mandates that records of personal health information in both paper and electronic format be retained for only as long as necessary to fulfill the purposes for which they were collected. The policy requires that records of personal health information collected for research not be retained for longer than specified in the research plan approved by a research ethics board, and that records of personal health information collected pursuant to a data sharing agreement not be retained for longer than set out in the agreement. The policy provides for the establishment of a records retention schedule, which exists and is used to monitor and manage retention of personal health information in accordance with research plans and data sharing agreements.

The policy stipulates that records of personal health information must be retained in a secure manner and assigns overall responsibility to the ICES' Director, Data Quality and Information Management. The policy and the ICES Data Management Standard identify the precise methods by which records of personal health information in paper and electronic format must be securely retained. Records of personal health information on paper must be stored in locked rooms and cabinets. Records of personal health information in electronic format on ICES systems must be stored on a server isolated from the ICES network. Records of personal health information on mobile media must be encrypted and stored in locked rooms and safes.

The policy requires agents to take reasonable steps to ensure records of personal health information are protected against theft, loss and unauthorized use, disclosure, copying, modification or disposal. The detail of the policy and supporting standard, compliance with which is mandatory, effectively defines the reasonable steps, which include use of locked rooms, cabinets and safes, segregated servers with access controls and encryption of mobile media. As well, under the standard, personal health information with direct personal identifiers is retained only temporarily until data quality issues have been resolved and is then securely destroyed by an ICES-approved method.

Regarding secure disposal, the ICES Data Management Policy and related procedures address the secure disposal of records of personal health information in both paper and electronic format. The policy requires records of personal health information to be disposed of in a secure manner that is consistent with the definition in PHIPA and its regulation. The policy states that secure disposal means that records are disposed of in such a manner that their reconstruction is not reasonably foreseeable in the circumstances.

The ICES Data Management Standard, Information Media Destruction SOP and Destruction of ICES Data SOP identify the precise methods for the secure disposal of records of personal health information in paper and electronic format, including various media. Records on paper must be disposed of by crosscut shredding or deposited into approved shredding bins for secure disposal by a third party service provider. Mobile devices or media must be wiped using secure overwrite utility software. Unserviceable mobile media must be physically destroyed by burning platters, degaussing or shredding to prevent reconstruction. Records on ICES servers must be permanently deleted. The policy requires that these secure disposal methods be consistent with PHIPA and its regulation, with IPC orders, including Order H0-001 and Order H0-006, and with IPC guidelines, fact sheets and best practices, including *Fact Sheet 10: Secure Destruction of Personal Information*.

The standard and the two SOPs address the secure retention of records of personal health information pending their secure disposal. Records intended for disposal must be physically segregated from records intended for recycling, stored in designated areas, and retained in clearly marked cabinets, safes or bins. Records on paper, if not shredded by ICES staff, must be stored in designated bins distributed throughout ICES' premises until they are securely disposed of by a third party service provider. Shredding bins are clearly marked, opaque and locked and their contents cannot be accessed by ICES staff. ICES' Facilities Manager is responsible for ensuring the security of paper bins pending secure disposal of their contents. Mobile media intended for disposal must be clearly marked and stored in a locked room in a clearly marked safe until they are securely disposed of. ICES' IT Service Lead is responsible for ensuring the media is securely retained pending its secure disposal.

In accordance with ICES' Data Management Policy, records of personal health information used for research purposes must not be retained by ICES longer than as is specified in the research plan approved by a research ethics board. Records of personal health information set out in a Data Sharing Agreement and used for research must not be retained longer than as set out in the Data Sharing Agreement.

ICES' compliance with all of the above is subject to an annual audit conducted by an ICES Privacy SME under ICES' Internal Audit Policy.

Tracking Approved Uses of Personal Health Information for Research

ICES uses the ICES Project PIA Log to track approved access to and use of personal health information for research conducted within ICES. The log is maintained by the Privacy and Legal Administrator, who is also responsible for creating and maintaining a file on the ICES network for every project, including research projects. They include the ICES Project PIA Form that approved conduct of the research with supporting research plans and approvals. Approved uses for external research are tracked by the DAS Research Project Manager in the DAS Projects Log. ICES' Data Quality and Information Management team, who are responsible for all data destruction at ICES, captures creation of certificates of destruction inside ICES' Contracts Database.

In addition to the use of personal health information for research, ICES also permits the use of de-identified and/or aggregate information for research purposes.

Review and Approval Process

Similar to the processes in place for the use of personal health information for research, a request for the use of de-identified and/or aggregate information for any project conducted at ICES first would be subject to a Project PIA. These PIAs would be conducted by a Privacy SME in accordance with ICES' Privacy Impact Assessment Policy and using an ICES Project PIA form completed by the project's Principal Investigator. The required content of the Project PIA form would be the same as for PIAs submitted for requests to use personal health information for research.

The Privacy SME would be responsible for approving or denying the request for use of de-identified and/or aggregate information for a research purpose. Once finalized, the Privacy SME who completes the review of the Project PIA would provide a copy of the approved form to the Principal Investigator, which would include the reason(s) the request was approved or denied.

Prior to use of the de-identified and/or aggregate information for a research purpose, an ICES Analyst would be required to review the information to ensure it does not identify any individuals and that it is not reasonably foreseeable in the circumstances that the information could be used, either alone or with other information, to identify an individual.

Conditions or Restrictions on the Approval

Any ICES Agent granted approval to use de-identified and/or aggregate data for a research purpose is prohibited from using the information, either alone or with other information, to identify an individual. This includes attempting to decrypt information that is encrypted, attempting to identify an individual based on unencrypted information and

attempting to identify an individual based on prior knowledge. The project's Principal Investigator is responsible for ensuring these restrictions are being upheld.

11. Log of Approved Uses of Personal Health Information for Research

| | | |
|---|--|---------------|
| APPLICATION | | |
| Not applicable <input checked="" type="checkbox"/> | Qualified application (<i>explain</i>) | |
| EXISTENCE & IMPLEMENTATION | | |
| ICES vehicle(s) | Name | Status |
| | a. ICES Project PIA Log | Implemented |
| | b. DAS Projects Log | Implemented |
| | c. Contracts Database | Implemented |
| DESCRIPTION | | |
| <p>The ICES Project PIA and DAS Projects logs, which are maintained by the Privacy and Legal Administrator and DAS Research Project Manager, respectively, capture:</p> <ul style="list-style-type: none"> • The name of the research study; • The principal investigator for the research study to whom approval is granted; • The date of the decision of the research ethics board that approved the written research plan; • The date ICES approved use of personal health information for the research study; • The nature of the personal health information approved for use; • The retention period for records of personal health information identified in the written research plan approved by the research ethics board; and • The projected end date for the research study. <p>For any personal health information collected for the research study, the Contracts Database maintained by ICES' Data Covenantors and ICES' Contracts Specialist, as applicable, captures:</p> <ul style="list-style-type: none"> • Collection date; • Obligations to return; • The planned destruction date; • The actual date of return or destruction (as applicable); and • The date of dispatch of any certificate of destruction. | | |

12. Policy & Procedures for Disclosure of Personal Health Information for Purposes Other Than Research

| | | |
|--|--|---------------|
| APPLICATION | | |
| Fully applicable <input checked="" type="checkbox"/> | Qualified application (<i>explain</i>) | |
| EXISTENCE & IMPLEMENTATION | | |
| ICES vehicle(s) | Name | Status |
| | a. Privacy Policy | Implemented |
| | b. Privacy Impact Assessment Policy | Implemented |
| | c. Privacy Incident Management Policy | Implemented |
| | d. Internal Audit Policy | Implemented |
| | e. Discipline & Corrective Action Policy | Implemented |
| | f. ICES Project PIA Form | Implemented |
| | g. ICES PIA Form – ICES Data Disclosure | Implemented |
| | h. Re-identification Risk Assessment Procedure | Implemented |
| DESCRIPTION | | |
| <p>ICES' Privacy Policy authorizes disclosure of personal health information to other prescribed organizations for their prescribed purposes, as permitted by PHIPA and its regulation and data sharing agreements. Disclosure is authorized only where other information will not serve the purpose, and only to the extent reasonably necessary to meet the purpose.</p> <p>Compliance with ICES' Privacy Policy is mandatory for all agents. Agents must notify an ICES Privacy SME at the first reasonable opportunity if they breach, or believe there has been a breach of, the policy, in accordance with ICES' Privacy Incident Management Policy. Violations including breach are subject to a range of disciplinary actions,</p> | | |

including warning, temporary or permanent loss of access privileges, legal sanctions and termination of employment or contract with ICES. Disciplinary actions are enforced by ICES' Director, Human Resources in consultation with ICES' Chief Privacy and Legal Officer under ICES' Discipline and Corrective Action Policy. Compliance is subject to annual audit by an ICES Privacy SME and an audit schedule established under ICES' Internal Audit Policy.

Review & Approval Process

ICES' Privacy Policy stipulates that disclosures must undergo, and be approved through, a privacy impact assessment. Assessments are conducted by an ICES Privacy SME under ICES' Privacy Impact Assessment Policy. Under that policy, ICES Strategic Partnerships must submit a Request for Data Disclosure PIA Form to ICES' Privacy and Legal Office. This is the prompt for an ICES Privacy SME to initiate an ICES PIA Form – ICES Data Disclosure to document its assessment, approval or denial, and any associated conditions and instructions. Once the ICES Privacy SME has approved the PIA and is satisfied all conditions and restrictions have been satisfied, the process for establishing a data sharing agreement may begin.

Approved or denied Data Disclosure PIAs are provided via email by the Privacy SME to Strategic Partnerships

Requirements for disclosure that are enforced through the ICES PIA Form – ICES Data Disclosure include:

- The disclosure is permitted by PHIPA and its regulation;
- All conditions and restrictions under PHIPA and its regulation are satisfied;
- Other information, such as de-identified or aggregate information, will not serve the purpose; and
- No more personal health information will be disclosed than is reasonably necessary for the identified purpose.

Conditions & Restrictions on the Approval

Where disclosure is authorized, the ICES PIA Form – ICES Data Disclosure stipulates that a data sharing agreement is required and includes a section with instructions recorded on the form. ICES' Contracts Specialist is responsible for ensuring a data sharing agreement is put in place prior to the disclosure, in accordance with ICES' policies, procedures and practices described in Parts 1(16) and 1(17) of Section B of our report.

ICES' Privacy Policy authorizes disclosure of de-identified information only to knowledge users, such as policy-makers. It does so with the caveat that the information first must be assessed in accordance with ICES' Re-identification Risk Assessment Procedure as creating no discernible risk of re-identification.

Secure Transfer, Return or Disposal

The topics secure transfer and secure return or disposal are both addressed in the ICES PIA Form – ICES Data Disclosure. The completed form provides instructions for how each of these topics must be addressed in the data sharing agreement that governs the disclosure, which must be in compliance with ICES' Secure Transfer, Retention and Destruction of ICES Data Policy. This includes the timeframe for return or destruction, including return or destruction in the context of termination of the data sharing agreement, and related enforcement mechanisms. ICES' Strategic Partnerships department is responsible for administration of data sharing agreements, including enforcement of these required elements.

Compliance

Compliance with the above policies, procedures and practices is mandatory for all agents. Agents must notify an ICES Privacy SME at the first reasonable opportunity if they breach, or believe there has been a breach of, the policies or procedures, in accordance with ICES' Privacy Incident Management Policy. Violations including breach are subject to a range of disciplinary actions including warning, temporary or permanent loss of access privileges, legal sanctions and termination of employment or contract with ICES. Disciplinary actions are enforced by ICES' Director, Human Resources in consultation with ICES' Chief Privacy and Legal Officer under ICES' Discipline and Corrective Action Policy. Compliance is subject to annual audit by an ICES Privacy SME and an audit schedule established under ICES' Internal Audit Policy.

13. Policy & Procedures for Disclosure of Personal Health Information for Research Purposes & the Execution of Research Agreements

| | | |
|---------------------------------------|-------------------------------------|--|
| APPLICATION | | |
| Fully applicable | <input checked="" type="checkbox"/> | Qualified application (<i>explain</i>) |
| EXISTENCE & IMPLEMENTATION | | |
| ICES vehicle(s) | Name | Status |
| | a. Privacy Policy | Implemented |

| | | |
|--|---|-------------|
| | b. Privacy Incident Management Policy | Implemented |
| | c. Privacy Audit & Monitoring Policy | Implemented |
| | d. Discipline & Corrective Action Policy | Implemented |
| | e. DAS Project Intake, Adjudication & Initiation Procedure | Implemented |
| | f. DAS Request Form | Implemented |
| | g. Cohort Disclosure Procedure | Implemented |
| | h. Confirmation of Feasibility | Implemented |
| | i. Dataset Creation Plan (various) | Implemented |
| | j. ICES Data & Analytic Services Agreement - Research | Implemented |
| | k. Authorized Researcher Confidentiality Agreement | Implemented |
| | l. Destruction of ICES Data Procedure | Implemented |
| | m. | |
| | n. CD-Link Proposal Review & Approval Standard Operating Procedure (SOP) | Implemented |

DESCRIPTION

ICES' Privacy Policy permits disclosure of personal health information to external researchers in two scenarios: first, disclosures of risk-reduced coded data are accessed by researchers on a secure ICES desktop. These researchers are permitted to receive and retain research results outside the desktop, but only after they have been de-identified by an ICES analyst.

In the second scenario, ICES permits disclosure of cohort lists to external researchers for publically funded research that cannot be reasonably conducted within ICES. Disclosure of cohort lists must involve only the minimum variables necessary to identify a study population externally, and must be transferred in accordance with the cohort disclosure service agreement.

Each of these disclosures for research is made only as permitted by PHIPA and section 18(4) of its regulation and data sharing agreements, and are subject to either the DAS Project Intake, Adjudication and Initiation Procedure or the Cohort Disclosure Procedure. The DAS Project Intake, Adjudication and Initiation Procedure requires that a dataset creation plan be established in consultation with, and approved by, an ICES Analyst. Dataset creation plans are used to ensure the personal health information used to create datasets for researchers is relevant and required to support the research objectives, and that ICES discloses personal health information only where other information will not serve the research purpose and discloses no more personal health information than is reasonably necessary.

The Cohort Disclosure Procedure also requires a dataset creation plan approved by ICES analytic staff. Cohort disclosures must be relevant and necessary to support research objectives that cannot be reasonably conducted at ICES; they also must align with ICES' mission, vision and values; the research must be deemed feasible by a DAS Staff Scientist; and the disclosure request must be approved by a research ethics board and a privacy impact assessment.

Compliance with the above policies, procedures and practices is mandatory for all agents. Agents must notify an ICES Privacy SME at the first reasonable opportunity if they breach, or believe there has been a breach of, the policies or procedures, in accordance with ICES' Privacy Incident Management Policy. Violations including breach are subject to a range of disciplinary actions, including warning, temporary or permanent loss of access privileges, legal sanctions and termination of employment or contract with ICES. Disciplinary actions are enforced by ICES' Director, Human Resources in consultation with ICES' Chief Privacy and Legal Officer under ICES' Discipline and Corrective Action Policy. Compliance is subject to annual audit by an ICES Privacy SME and an audit schedule established under ICES' Internal Audit Policy.

Review & Approval Process

The DAS Project Intake, Adjudication and Initiation Procedure defines the process and roles and responsibilities for approving or denying requests for disclosure of risk-reduced coded data for research purposes, and the process to be followed in this regard.

The review and approval process is launched by submission of a completed DAS Request Form by the external researcher. The request provides a high-level description of the proposed research, which is reviewed by the DAS Project Manager and DAS Staff Scientist against criteria that include the availability of relevant data. Where the proposed research is judged not to be feasible, this is communicated to the researcher.

Where the proposed research passes the initial review, the DAS Project Manager schedules a consultation with the external researcher, the DAS Project Manager and DAS Staff Scientist. The consultation is used to identify, among other things, the specific ICES data holdings and data variables that would be required. The DAS Project Manager and DAS Staff Scientist then jointly prepare a Confirmation of Feasibility, which is issued to the researcher. The Confirmation of Feasibility is issued subject to an explicit condition: the researcher must seek, and provide evidence of, research ethics board approval that meets the requirements of section 44 of PHIPA. To ensure the approval properly reflects the involvement of ICES data holdings, ICES safeguards and relevant legal authorities, the Confirmation of Feasibility incorporates a template research plan that contains this required information.

Once, and if, obtained, the researcher delivers a copy of the approval letter, with a copy of the research plan as submitted to the research ethics board, to the DAS Research Program Manager. The DAS Research Program Manager, in turn, submits these documents to an ICES Privacy SME for review. Once the ICES Privacy SME is satisfied the research plan conforms to the Confirmation of Feasibility as issued, and has the required research ethics board approval, the ICES Privacy SME informs the DAS Project Manager and DAS Research Program Manager.

The DAS Research Program Manager then arranges a follow-up consultation between the researcher and the DAS Staff Scientist to establish a Dataset Creation Plan. The Dataset Creation Plan is designed to ensure the dataset prepared for the research is limited to ICES data holdings previously identified as relevant and available, and reflected in the research plan that has been approved by a research ethics board. The Dataset Creation plan is also used to further limit the data to that which is relevant and required, taking into account the research objectives, and to avoid disclosure of personal health information where de-identified or aggregate information would serve the purpose.

The Cohort Disclosure Procedure defines the process, roles and responsibilities for approving or denying requests for cohort lists to external researchers for publically funded research that cannot be reasonably conducted within ICES.

The review and approval process is launched by submission of a Cohort Disclosure Request Form, which must provide the purpose of the cohort disclosure and the information requested, including the cohort definition and a list of variable names and descriptors. The Cohort Disclosure Request Form is submitted to the DAS Research Program Coordinator. The Coordinator requests initial adjudication of the cohort disclosure request from the Director, Data Quality and Information Management (DQIM) and the DAS Staff Scientist. Further adjudication by the Chief Science Officer is necessary if the request involves contacting patients or providers. Adjudication of cohort requests is based on data quality and availability, scope and timelines. The denial of requests determined to be infeasible are communicated by the DAS Research Program Coordinator to the requestor.

Where requests are determined to be feasible, the DAS Research Program Coordinator schedules a consultation with the requestor, the Director, DQIM, DAS Project Manager, DAS Staff Scientist and, where necessary, Chief Science Officer. The purpose of the consultation is to assess the request against disclosure criteria, including scope, timelines, datasets and variables. The DAS Research Program Coordinator, Staff Scientist and Project Manager then jointly prepare a Confirmation of Feasibility – Cohort Disclosure. This document is provided to the requestor for submission to a research ethics board for approval.

The requestor then must provide the Confirmation of Feasibility to a research ethics board as supporting documentation for the application. If approved by the research ethics board, the requestor must provide the board's approval letter and supporting documentation to the DAS Research Program Coordinator, who in turn provides the documentation to the Privacy and Legal Office for review, along with a privacy impact assessment. Once approved by the Privacy and Legal Office, the DAS Research Program Coordinator drafts and issues the Service Agreement – Cohort Disclosure, which outlines the requestor's contractual obligations, including terms and conditions of the agreement and the method of transfer of the cohort list. The service agreement is considered executed only after the requestor provides a signed copy of the agreement to ICES.

Conditions or Restrictions on the Approval

Under the DAS Project Intake, Adjudication and Initiation Procedure, approval is subject to two conditions. First, the researcher must supply a copy of the research plan and evidence of its approval by a research ethics board. Second, the researcher must enter into an ICES Data and Analytic Services Agreement, and each member of the research team, an Authorized Researcher Confidentiality Agreement. Under the procedure, an ICES Privacy SME must be satisfied the research plan is consistent with the requested disclosure by ICES, and has the required research ethics board approval. Once satisfied, the ICES Privacy SME advises the DAS Project Manager, who prepares and oversees execution of the agreements.

Identifiable information contained in a cohort list must not on its own permit derivation of conclusions or results, and disclosure of a cohort list must be (1) for the purpose of enabling abstraction or examination of data from existing data sources, including, but not limited to, medical records, disease registries, human biological materials or genetic databases; or (2) for the purpose of contacting physicians or patients for recruitment in research. For disclosures for the purpose of (1), the disclosure must be

- For the purpose of conducting publicly funded research that cannot be reasonably conducted within ICES;
- For research that aligns with ICES' Mission, Vision and Values;
- Considered by ICES to be of acceptable reputational risk;
- Deemed practically feasible by ICES' DAS Staff Scientist; and
- Approved by a research ethics board and ICES Privacy SME.

In addition to the requirements for (1) above, disclosures for the purpose of contacting physicians for recruitment in research must be approved by ICES' Chief Science Office. Disclosures for the purpose of contacting patients for recruitment in research also must be approved by the Chief Science Officer, and must also be used to contact a patient whose information ICES collected from the patient's physician, and that physician must first obtain the patient's written consent to be contacted for recruitment in the research.

Secure Transfer

No risk-reduced coded data are transferred to external researchers and remain at all times on the ICES desktop. For cohort disclosures, an ICES Data Covenantor first verifies that the personal identifiers outlined in the dataset creation plan correspond exactly to the service agreement. Once confirmed, the Data Covenantor transfers the cohort list as per the method outlined in the agreement.

Secure Return or Disposal

Risk-reduced coded data remains at all times on ICES systems. For cohort disclosures, the DAS Research Program Manager is responsible for ensuring that cohort lists disclosed to external researchers are securely disposed of in accordance with the method and timeframe specified in the service agreement. This involves the DAS Research Program Manager confirming and documenting receipt of a data destruction certificate from the external researchers. Where a data destruction certificate is not received within the timeframe specified in the agreement, the DAS Research Program Manager contacts the research team's principal investigator for confirmation that the cohort lists has been securely disposed of as specified in the agreement.

Documentation Related to Approved Disclosures of Personal Health Information

Under the DAS Project Intake, Adjudication and Initiation Procedure and the Cohort Disclosure Procedure, the DAS Research Program Manager is responsible for uploading the signed ICES Data and Analytic Services Agreement or the Service Agreement – Cohort Disclosure, and any associated Authorized Researcher Confidentiality Agreements to ICES' Contracts Database. The research plan and research ethics board approval are incorporated into appendices of the agreements, so they are also retained as a result. Certificates of destruction are uploaded to ICES' Contracts Database by the Compliance Analyst pursuant to the Destruction of ICES Data Procedure.

14. Template Research Agreement

| | | |
|--|--|---------------|
| APPLICATION | | |
| Not applicable <input type="checkbox"/> | Qualified application (<i>explain</i>) | |
| EXISTENCE & IMPLEMENTATION | | |
| ICES vehicle(s) | Name | Status |
| | a. ICES Data & Analytic Services Agreement - Research (various) | Implemented |
| Comments | The Cohort Disclosure Procedure requires the completion and execution of a Service Agreement – Cohort Disclosure prior to disclosure of cohort lists. The cohort disclosure service agreement makes up part of the Data & Analytic Services Agreements for Research; it includes the same provisions as those agreements, with the addition of provisions for the secure transfer, retention and disposal of cohort lists. | |
| DESCRIPTION | | |
| A research agreement must be executed with researchers to whom personal health information will be disclosed prior to the disclosure of personal health information for research purpose. ICES has established template research | | |

agreements for use when such an agreement is required under its policies, procedures and practices. The templates address the matters set out below.

General Provisions

The templates describe ICES' status as a prescribed entity under PHIPA and the duties and responsibilities arising from this status. They specify the precise nature of the personal health information that will be disclosed by ICES for the research, and provide a definition of personal health information that is consistent with PHIPA and its regulation.

Purposes of Collection, Use & Disclosure

The templates identify the research purpose for which the personal health information is being disclosed to, and may be used or disclosed by, the researcher. They also identify the statutory authority for each collection, use and disclosure.

The templates permit the researcher to use the personal health information only for the purposes set out in the written research plan approved by the research ethics board and prohibit the use of the personal health information for any other purpose. They also prohibit the researcher from permitting persons to access and use the personal health information except those persons described in the written research plan approved by the research ethics board.

The templates all explicitly prohibit linking to other information. They also require the researcher to acknowledge that the personal health information that is being disclosed pursuant to them is necessary for the identified research purpose and that other information, namely de-identified and/or aggregate information, will not serve the research purpose. In addition, the researcher is required to acknowledge that no more personal health information will be disclosed to them or will be used than is reasonably necessary to meet the research purpose.

The templates require the researcher to acknowledge and agree not to disclose the personal health information except as required by law and subject to the exceptions and additional requirements prescribed in the regulation to PHIPA. The researcher must also agree not to publish the personal health information in a form that could reasonably enable identification of, or make or attempt to make contact, directly or indirectly, with, any individual to whom the personal health information relates.

Compliance with the Statutory Requirements for the Disclosure for Research Purposes

The templates are entered into only once the researcher has obtained research ethics board approval of a written research plan that meets the requirements of PHIPA, copies of which are incorporated in appendices to the agreement and acknowledged by the researcher and ICES. The researcher is required to agree to comply with the terms of the agreement, the written research plan as approved by the research ethics board, including any conditions.

Secure Transfer

No risk-reduced coded data are transferred to external researchers and remain at all times on the ICES desktop. The Service Agreement – Cohort Disclosure template specifies the requirement of secure transfer of cohort lists. It specifies the file transfer gateway as the secure manner in which cohort lists are transferred, and requires specification as to whom they are transferred. The requirements set out in the service agreement are in accordance with requirements specified in Part 2, section 7 of the IPC Manual.

Secure Retention, Return & Disposal

Risk-reduced coded data remain at all times on ICES systems. For this reason, the templates specific to risk-reduced coded data do not address secure retention, return or disposal by the researcher. The Service Agreement – Cohort Disclosure specifies the retention period for the cohort list, as well as the manner in which the list will be securely retained by the researcher(s) to whom the cohort list was disclosed. The period and manner of retention must be in accordance with the requirements set out in Part 2, section 5 of the IPC Manual and the research plan approved by a research ethics board.

The service agreement further requires the researcher(s) to whom the cohort list was disclosed to securely retain the data using industry best practices of encryption and in accordance with any additional stipulations from the approving research ethics board, in order to protect the information against theft, loss and unauthorized use or disclosure, and to safeguard the information against unauthorized copying, modification or disposal.

Notification

The templates require the researcher to notify ICES immediately, in writing, if the researcher becomes aware of a breach or suspected breach of the agreement, a breach or suspected of s 44(6) of PHIPA or if personal health

information subject to it is stolen, lost or accessed by unauthorized persons or is believed to have been stolen, lost or accessed by unauthorized persons. The templates require the researcher to take steps that are reasonable in the circumstances to contain the breach, and identify the process and contact for providing notice, which must be provided in writing.

Consequences of Breach and Monitoring Compliance

The templates provide for automatic termination if the researcher fails to co-operate with ICES' investigation, or remediation, of any breach or suspected breach. They are not subject to audit. The templates make the researcher responsible for ensuring compliance of other members of the research team, and require that each enter into a confidentiality agreement as a condition of being issued credentials to access the personal health information on the ICES desktop.

15. Log of Research Agreements

| | | |
|---|--|---------------|
| APPLICATION | | |
| Not applicable <input type="checkbox"/> | Qualified application (<i>explain</i>) | |
| EXISTENCE & IMPLEMENTATION | | |
| ICES vehicle(s) | Name | Status |
| | a. DAS Project Intake, Adjudication & Initiation Procedure | Implemented |
| | b. DAS Projects Log | Implemented |
| DESCRIPTION | | |
| <p>ICES maintains the DAS Projects Log, which is a log of research agreements. Maintained under the DAS Project Intake, Adjudication and Initiation Procedure, the DAS Projects Log captures:</p> <ul style="list-style-type: none"> • The name of the research study; • The name of the principal researcher to whom the personal health information was disclosed pursuant to the research agreement; • The date of receipt of the written application, the written research plan and the written decision of the research ethics board approving the research plan; • The date that the approval to disclose the personal health information for research purposes was granted; • The date that the research agreement was executed; • The date that the personal health information was disclosed; and • The nature of the personal health information disclosed. <p>The DAS Projects Log captures the end date that was approved by the research ethics board. For service agreements for cohort disclosures, the log also captures the date on which the cohort list will be securely disposed of by the researcher, and the date ICES receives the data destruction certificate for the list.</p> | | |

16. Policy & Procedures for the Execution of Data Sharing Agreements

| | | |
|--|--|---------------|
| APPLICATION | | |
| Fully applicable <input checked="" type="checkbox"/> | Qualified application (<i>explain</i>) | |
| EXISTENCE & IMPLEMENTATION | | |
| ICES vehicle(s) | Name | Status |
| | a. Privacy Impact Assessment Policy | Implemented |
| | b. ICES PIA Form – ICES Data Disclosure | Implemented |
| | c. ICES PIA Form – New Data Holding | Implemented |
| | d. ICES Project PIA Form | Implemented |
| | e. Request for New Data Holding PIA Form | Implemented |
| | f. Request for ICES Data Disclosure PIA Form | Implemented |
| | g. Internal Audit Policy | Implemented |
| | h. Discipline & Corrective Action Policy | Implemented |
| | i. Privacy Incident Management Policy | Implemented |
| | j. Contracts Database | Implemented |
| DESCRIPTION | | |
| <p>ICES has developed policies, procedures and practices to identify the circumstances under which and the processes to be followed to put in place data sharing agreements.</p> | | |

ICES' Privacy Impact Assessment Policy stipulates that no personal health information may be collected or disclosed unless approved through a privacy impact assessment. Assessments are guided by forms, which define the circumstances under which a data sharing agreement is required. In the case of disclosures for purposes other than research, a data sharing agreement is always required.

The forms, which must be completed and approved by an ICES Privacy SME, set out the requirements that must be satisfied and the process to be followed in relation to data sharing agreements. For example, the ICES Project PIA Form is used to assess requests to collect personal health information for a specific project. Once complete, that form identifies the correct legal authority for the collection and corresponding data sharing agreement template, and gathers content required to complete the template. Collectively ICES' privacy impact assessment forms ensure that ICES enters into data sharing agreements:

- To disclose personal health information for purposes other than research only where the disclosure has been approved in accordance with ICES' policies, procedures and practices described in Part 1(12) of Section B of this report; and
- To collect personal health information for purposes other than research only where the collection has been approved in accordance with ICES' policies, procedures and practices described in Part 1(4) of Section B of this report.

The forms include a section for data sharing agreement instructions and approvals, which are provided by ICES' Privacy and Legal Office. Responsibility for initiation is specified on the forms, and varies by scenario. Where collection is for the purposes of a single project, the form is initiated by the principal investigator. In all other cases, including requests to disclose, ICES Strategic Partnerships are required to submit the appropriate request for PIA form to ICES' Privacy and Legal Office, who then initiate the corresponding privacy impact assessment form. Once approved, the responsible ICES Privacy SME alerts ICES' Contracts Specialist, who is responsible for ensuring data sharing agreements are executed in accordance with the approvals and instructions documented on the form. The forms also stipulate that, once executed, ICES' Privacy and Legal Office reflect this in a log, which they are required to maintain.

Compliance with the policy and its procedures is mandatory for all agents. Agents must notify an ICES Privacy SME at the first reasonable opportunity if they breach, or believe there has been a breach of, the policies or procedures, in accordance with ICES' Privacy Incident Management Policy. Violations including breach are subject to a range of disciplinary actions, including warning, temporary or permanent loss of access privileges, legal sanctions and termination of employment or contract with ICES. Disciplinary actions are enforced by ICES' Director, Human Resources in consultation with ICES' Chief Privacy and Legal Officer under ICES' Discipline and Corrective Action Policy. Compliance is subject to annual audit by an ICES Privacy SME and an audit schedule established under ICES' Internal Audit Policy.

17. Template Data Sharing Agreement

| | | |
|--|---|---------------|
| APPLICATION | | |
| Fully applicable <input checked="" type="checkbox"/> | Qualified application (<i>explain</i>) | |
| EXISTENCE & IMPLEMENTATION | | |
| ICES vehicle(s) | Name | Status |
| | a. ICES DSA (HIC) | Implemented |
| | b. ICES DSA (Researcher) | Implemented |
| | c. ICES Data & Analytic Services Agreement – Research (various) | Implemented |
| DESCRIPTION | | |
| A data sharing agreement must be executed prior to the collection or disclosure of personal health information for purposes other than research. ICES has established template data sharing agreements for use when a data sharing agreement is required under its policies, procedures and practices. The templates address the matters set out below. | | |
| <u>General Provisions</u> | | |
| The templates describe ICES' status as a prescribed entity under PHIPA and the duties and responsibilities arising from that status. They specify the precise nature of any personal health information subject to the agreement and provide a definition of personal health information that is consistent with PHIPA and its regulation. The templates also identify the party that is collecting and party that is disclosing under the agreements. | | |
| <u>Purposes of Collection, Use & Disclosure</u> | | |

The templates identify the purposes for which personal health information is being collected and will be used under the agreements. In identifying these purposes, the templates explicitly state that direct personal identifiers, such as names and personal health numbers, will be removed or replaced with a confidential code and only linked with other similarly coded information. In addition, the agreements describe the nature and source of that other information, how linkage will be conducted and why it is required for the identified purpose.

The templates also contain an acknowledgement that any personal health information being collected is, and is no more than, reasonably necessary for the purpose, and that other information, such as de-identified or aggregate information, will not serve the purpose. The templates stipulate that any personal health information may be disclosed only where required by law. They further stipulate that all collection, use or disclosure of any personal health information that is subject to the agreements must comply with PHIPA and its regulation, and set out the authority for each collection, use and disclosure contemplated.

Secure Transfer

The templates require secure transfer of any personal health information, and set out the manner, contact and procedure for transfer. This information is captured in an appendix, which is completed by the Contracts Specialist using information captured in the privacy impact assessment that documents approval for the collection. The exception is collection from external researchers, who have been approved to receive access to a data cut on the secure ICES desktop. In that scenario, the required information about transfer is captured in an appendix to the template ICES Data and Analytic Services Agreement – Research, which is populated by the DAS Research Project Manager. This permits selection of the ICES-approved method for secure transfer that is most appropriate in each case. In the majority of cases, the method selected will be use of an ICES-managed encrypted channel.

Secure Retention

The templates stipulate that ICES is permitted to retain personal health information with direct personal identifiers only as long as required for ICES analysts, who created linked datasets for projects, to detect and resolve data quality issues. They also specify the retention method. Where personal health information is disclosed to ICES for research under section 17 of O. Reg. 329/04, the retention period for indirect personal identifiers (i.e. Coded Data) is set out in the terms of the respective agreements with ICES' data partners. Physical media must be retained in locked rooms or cabinets, and information saved on ICES systems must be isolated from the ICES network and accessible by ICES Data Covenantors only. Both methods of retention comply with ICES' policies governing secure retention. In addition, the templates include a specific provision requiring ICES to take reasonable steps to protect any personal health information against theft, loss and unauthorized use or disclosure, and a range of supporting safeguards. The most important of these is the stipulation that scientists and analytic staff will have access to information without direct personal identifiers only, and external researchers access to risk-reduced coded data, and on condition they make no attempt to re-identify any person.

Secure Return or Disposal

ICES does not require the return of records. The templates stipulate that ICES securely destroy the personal health information with direct personal identifiers after the coded information, which is derived from it, has been delivered to ICES' analytic staff for linking. The templates provide a definition of secure destruction and identify the precise methods that may be used. This definition is consistent with PHIPA and its regulation, as well as with guidelines, fact sheets and best practices issued by the IPC, including IPC Fact Sheet 10: Secure Destruction of Personal Information. The templates specify that destruction must be carried out within six months of delivery to ICES' analytic staff, and a destruction certificate provided five business days after that. The exception to the six-month timeframe is information collected to update a general data holding, which are retained for seven years. Destruction certificates must be delivered to the general contact for notice, who is identified in the agreement, and identify the records of personal health information disposed of and the date, time, location and method of destruction used, and bear the name and signature of the ICES Data Covenantor who carries out the destruction.

Notification

The templates require that notification be provided at the first reasonable opportunity if the agreement has been breached or personal health information subject to the agreement has, or is suspected to have, been stolen, lost or accessed by unauthorized persons. The process and contact for notice are defined, which must be provided in writing. The templates also require that reasonable steps be taken to contain the breach and to contain the theft, loss or access by unauthorized persons.

Consequences of Breach & Monitoring Compliance

The templates outline the consequences of breach of the agreements, which apply to all ICES Agents and include a right of immediate termination in the event of a privacy breach. To enable compliance, the templates specifically require that any ICES Data Covenantor who handles the personal health information must be familiar with, and

agree to uphold, the terms and conditions of the agreement and that this be confirmed in a confidentiality agreement. The templates specify that compliance is not subject to audit.

Data Sharing Agreements with Other Prescribed Entities and Prescribed Registries

The ICES templates described above are not suited to, and are not used for, data sharing with other prescribed entities and prescribed registries. Nevertheless, the data sharing agreements, which are in place, with those organizations all satisfy the required content set out in this section. Currently, data sharing agreements are in place with the following: Better Outcomes Registry and Network (BORN), CorHealth Ontario, Cancer Care Ontario, Pediatric Oncology Group of Ontario, and Canadian Institute for Health Information.

18. Log of Data Sharing Agreements

| | | | |
|--|-------------------------------------|--|---------------|
| APPLICATION | | | |
| Fully applicable | <input checked="" type="checkbox"/> | Qualified application (<i>explain</i>) | |
| EXISTENCE & IMPLEMENTATION | | | |
| ICES vehicle(s) | Name | | Status |
| | a. Contracts Database | | Implemented |
| | b. ICES Project PIA Log | | Implemented |
| | c. DQIM Data Disclosure Log | | Implemented |
| | d. ICES PIA – Data Disclosure Form | | Implemented |
| DESCRIPTION | | | |
| <p>ICES has developed and maintains a log of executed data sharing agreements. Information captured in the log includes:</p> <ul style="list-style-type: none"> Name of the person or organization from whom the personal health information was collected or to whom the personal health information was disclosed; Date agreement executed; Date personal health information was collected; Nature of the personal health information; Retention end-date or required destruction date for the personal health information; Agreement termination date; Date on which personal health information has been securely returned or destroyed; and Date destruction certificates were provided. <p>The remaining required elements are captured through other vehicles developed and maintained by ICES:</p> <ul style="list-style-type: none"> The ICES Project PIA Log contains the date the collection was approved; The ICES PIA – Data Disclosure Form contains the date the disclosure was approved; The DQIM Data Disclosure Log contains the dates of all disclosures of personal health information. | | | |

19. Policy & Procedures for Executing Agreements with Third Party Service Providers in Respect of Personal Health Information

| | | | |
|--|--|--|---------------|
| APPLICATION | | | |
| Fully applicable | <input checked="" type="checkbox"/> | Qualified application (<i>explain</i>) | |
| EXISTENCE & IMPLEMENTATION | | | |
| ICES vehicle(s) | Name | | Status |
| | a. ICES Privacy Impact Assessment Policy | | Implemented |
| | b. ICES PIA – Service Provider Form | | Implemented |
| DESCRIPTION | | | |
| <p>ICES' Privacy Impact Assessment Policy stipulates that a privacy impact assessment be conducted prior to establishing any service relationship involving personal health information. Responsibility for requesting a privacy impact assessment rests with the agent who wishes to establish the service relationship. The ICES PIA – Service Provider Form, which is used to conduct privacy impact assessments in this scenario, requires that a service level agreement be put in place prior to permitting access to personal health information by a third party service provider.</p> <p>ICES' Privacy and Legal Office is responsible for the conduct of privacy impact assessments. Privacy impact assessments are conducted by ICES Privacy SMEs using the ICES PIA – Service Provider Form. Completion of that form results in:</p> | | | |

- Acceptance of responsibility by the requestor to ensure a service level agreement is put in place by ICES' Procurement and Contracts Analyst;
- Compliance of all service level agreements with the template described in Part 1(20) of this report;
- A determination by the responsible ICES Privacy SME that personal health information is provided to any third party service provider only where other information, such as de-identified or aggregate information, will not serve the purpose, and no more personal health information is provided than is reasonably necessary to meet the purpose;
- Acceptance of responsibility by the requestor for ensuring compliance with service provider obligations to return or destroy, and provide a certificate of destruction for, any personal health information in the event of termination, and referring cases of non-compliance to the Chief Privacy and Legal Officer for action after 30 days; and
- Responsibility of ICES' Procurement Manager to ensure any service level agreement is logged in, and a copy uploaded to, ICES' Contracts Database.

Compliance with the policy and procedures is mandatory for all agents. Agents must notify an ICES Privacy SME at the first reasonable opportunity if they breach, or believe there has been a breach of, the policies or procedures, in accordance with ICES' Privacy Incident Management Policy. Violations including breach are subject to a range of disciplinary actions, including warning, temporary or permanent loss of access privileges, legal sanctions and termination of employment or contract with ICES. Disciplinary actions are enforced by ICES' Director, Human Resources in consultation with ICES' Chief Privacy and Legal Officer under ICES' Discipline and Corrective Action Policy. Compliance is subject to annual audit by an ICES Privacy SME and an audit schedule established under ICES' Internal Audit Policy.

20. Template Agreement for All Third Party Service Providers

| | | |
|---|--|--|
| APPLICATION | | |
| Fully applicable | <input checked="" type="checkbox"/> | Qualified application (<i>explain</i>) |
| EXISTENCE & IMPLEMENTATION | | |
| ICES vehicle(s) | Name | Status |
| | a. ICES Privacy Impact Assessment Policy | Implemented |
| | b. ICES PIA – Service Provider Form | Implemented |
| DESCRIPTION | | |
| <p>ICES' Privacy Impact Assessment Policy stipulates that a privacy impact assessment be conducted by an ICES Privacy SME prior to establishing any service relationship involving personal health information. The ICES PIA – Service Provider Form, which is used to conduct privacy impact assessments in this scenario, requires that a service level agreement be put in place in all cases and defines minimum content for such agreements. The minimum content includes:</p> <ul style="list-style-type: none"> • A description of ICES' prescribed status and its associated duties under PHIPA and its regulation; • Whether or not the service provider will act as ICES' agent, and if yes, an agreement to comply with PHIPA and provisions in the agreement related to the collection, access, use, disclosure, secure transfer, retention and destruction of personal health information; • The precise nature of the personal health information the service provider will be permitted to access or use, and a definition of personal health information that is consistent with PHIPA and its regulation; • The identity of the party that is collecting or disclosing personal health information; • An obligation of the service provider to deliver services in a professional manner, in accordance with industry standards and practices and by properly trained agents of the service provider; • Prohibition against access, use and disclosure of personal health information except as necessary to provide the agreed services and permitted by the agreement or as required by law; • Purposes of authorized access, use and disclosure of any personal health information and related limitations and conditions as well as authority under PHIPA and its regulation; • Prohibition against use and disclosure where other information will serve the purpose or in excess of that which is reasonably necessary; • General and specific obligations to take reasonable steps to protect information against theft, loss and unauthorized use, disclosure, copying, modification or disposal; • An obligation and specific method to make agents who will have access to records of personal health information aware of and agree to comply with the obligations in the agreement; • Where subcontracting is permitted, the service provider's duty to enter into an equivalent agreement with the subcontractor and provide advance notice of subcontracting and a copy of the agreement to ICES; | | |

- Where relevant, whether the information will be returned or destroyed following termination of the agreement, the associated timeframe and specific manner, which must comply with ICES' policies, procedures and practices reported in Part 2(7) of Section B of this report;
- Consequences of breach, duty to notify at the first reasonable opportunity and associated process and timelines, including manner and contact for notice and containment requirements; and
- Where appropriate taking in account the information and the service, right of audit and associated mechanics, including notice.

Where the service provider is acting as an electronic service provider that is not an agent of ICES:

- Prohibition against disclosure except as required by law .

Where the service involves transfer:

- Secure transfer method, procedure, timeframes, conditions and recipients, which meet the requirements of ICES' own policies, procedures and practices for secure transfer;
- Service provider's obligation to maintain an inventory of transfers, inbound and outbound;
- Service provider's obligation to provide certificates of receipt, with date and time and mode of transfer; and
- Overarching responsibility of the service provider to maintain security during transfer.

Where the service involves retention:

- Service provider's obligation to maintain an inventory of, and track, records of personal health information being retained;
- Secure retention method (by medium); and
- Overarching responsibility of the service provider to maintain security over retained records.

Where the service includes destruction:

- A definition of secure disposal that is consistent with PHIPA and its regulation;
- Destruction method (by medium) and security, which is consistent with PHIPA and its regulation and relevant orders, guidelines, fact sheets and best practices issued by the Information and Privacy Commissioner;
- Service provider's obligation to provide certificates of destruction that specify records destroyed, date, time, method and responsible agent (including signature), the timeframe for doing so and ICES recipient;
- Timeframes and triggers for destruction (including termination); and
- Right of ICES to witness destruction.

Where disposal is the primary service provided, in addition to the requirements above:

- Timeframe within which destruction must be carried out;
- Precise destruction method for each medium involved;
- Conditions surrounding destruction;
- Service provider's obligation to maintain an inventory of, and track, records of personal health information being destroyed; and
- Persons responsible for ensuring destruction is secure.

21. Log of Agreements with Third Party Service Providers

| | | |
|--|--|---------------|
| APPLICATION | | |
| Fully applicable <input checked="" type="checkbox"/> | Qualified application (<i>explain</i>) | |
| EXISTENCE & IMPLEMENTATION | | |
| ICES vehicle(s) | Name | Status |
| | a. Contracts Database | Implemented |
| DESCRIPTION | | |
| ICES has defined and maintains a log of agreements with third party service providers. Information captured in the log includes: | | |
| <ul style="list-style-type: none"> • Service provider name; • Service description; | | |

- Effective date;
- Date the personal health information was transferred/provided;
- Nature of the personal health information provided/accessed;
- Termination date;
- Whether the personal health information will be returned or destroyed; and
- Date information returned/certificate date.

22. Policy & Procedures for the Linkage of Records of Personal Health Information

| | | |
|--|--|---------------|
| APPLICATION | | |
| Not applicable <input checked="" type="checkbox"/> | Qualified application (<i>explain</i>) | |
| EXISTENCE & IMPLEMENTATION | | |
| ICES vehicle(s) | Name | Status |
| | a. Protection of ICES Data Policy | Implemented |
| | b. Privacy Impact Assessment Policy | Implemented |
| | c. ICES Project PIA Form | Implemented |
| | d. ICES Project PIA Review Procedure | Implemented |
| | e. DAS Project Intake, Adjudication & Initiation Procedure | Implemented |
| | f. Dataset Creation Plan | Implemented |
| | g. Privacy Incident Management Policy | Implemented |
| | h. Internal Audit Policy | Implemented |
| | i. Linking ICES Data Procedure | Implemented |

ICES' Protection of ICES Data Policy permits linkages of personal health information, and identifies the purposes for and circumstances under which this is permitted. Linkages of personal health information are permitted for the purposes of creating project datasets to support the conduct of projects and research that have been reviewed and approved in accordance with ICES policies, procedures and practices.

The mechanism for approval for projects and research, and associated linkages, is a privacy impact assessment or the DAS Project Intake, Adjudication and Initiation Procedure. In all cases, criteria for approval include whether:

- In the case of research only, it will be conducted at ICES or externally;
- The project or research will be conducted by ICES and only involve linkages of personal health information from ICES' data holdings;
- The project or research will be conducted at ICES and involve linkage with records of personal health information collected from external sources;
- In the case of research conducted externally, the research will involve linkages of personal health information from ICES' data holdings; and
- In the case of research conducted externally, the research will involve linkages of personal health information from ICES' data holdings with records of personal health information collected from external sources for the purposes of the research.

Review & Approval Process

Again, permission to link personal health information is subject to a review and approval process. Privacy impact assessments are conducted by ICES Privacy SMEs under ICES' Privacy Impact Assessment Policy. The DAS Project Intake and Adjudication Procedure requires joint review and approval by an ICES Privacy SME and a DAS Staff Scientist, and establishment of a supporting dataset creation plan by the DAS Staff Scientist.

The ICES Project PIA Form is used to request linkages of personal health information for projects and research conducted within ICES. Submitted to ICES' Privacy and Legal Office by the principal investigator, these forms define the requirements and documentation that must be satisfied in requesting, reviewing and determining whether, and on what basis, permission for linkages of personal health information is granted. The DAS Project Intake and Adjudication Procedure defines the requirements and documentation that must be satisfied to approve external research in other cases. These include the requirement that the external researcher:

- Complete a DAS Request Form to describe the proposed research;
- Provide a research plan that lists the ICES data holdings to be used and evidence of research ethics board approval of the plan;
- Consult with the DAS Staff Scientist to develop a Dataset Creation Plan;

- Enter into a research agreement that supports all of the above.

To approve, the reviewer(s) must be satisfied that the requested linkages are:

- Permitted by PHIPA and its regulation;
- Permitted by data sharing agreements and research ethics board approvals applicable to the request; and
- Relevant and reasonably necessary for accomplishment of the stated objectives.

Once finalized, ICES' Privacy and Legal Administrator or the Privacy SME who approved the Project PIA sends the approved ICES Project PIA Form to the principal investigator for the project and uploads a copy to a network folder, where it is accessible to analytic staff, who perform linkages. The DAS Research Program Coordinator uploads a copy of the signed research agreement to ICES' Contracts Database and submits the signed research agreement to ICES Finance to issue a billing number, which allows staff to be assigned to the research.

Conditions & Restrictions on Approval

Under ICES' Protection of ICES Data Policy, linked records of personal health information must be de-identified prior to delivery of research results to an external researcher for use and retention outside the secure ICES desktop known as IDAVE. Linkages for projects and research conducted within ICES are subject to ICES' policies, procedures and practices described at Parts 1(8), 1(10) and 1(24) of Section B of this report.

Process for the Linkage of Records of Personal Health Information

The Protection of ICES Data Policy stipulates that linking records of personal health information is the responsibility of ICES analytic staff. The Linking ICES Data Procedure outlines the process to be followed, the manner and the agents responsible for linking when approved in accordance with ICES policies, procedures and practices.

Secure Retention & Disposal

Under the Protection of ICES Data Policy, until and unless they are de-identified in accordance with ICES' policy and procedures, all linked records of personal health information are subject to the policies, procedures and practices governing secure retention and disposal described in 2(5) and 2(8) in Part 2 of Section B of this report.

Compliance, Audit & Enforcement

Compliance with the above policies, procedures and practices is mandatory for all agents. Agents must notify an ICES Privacy SME at the first reasonable opportunity if they breach, or believe there has been a breach of, the policies or procedures, in accordance with ICES' Privacy Incident Management Policy. Violations including breach are subject to a range of disciplinary actions including warning, temporary or permanent loss of access privileges, legal sanctions and termination of employment or contract with ICES. Disciplinary actions are enforced by ICES' Director, Human Resources in consultation with ICES' Chief Privacy and Legal Officer under ICES' Discipline and Corrective Action Policy. Compliance is subject to annual audit by an ICES Privacy SME and an audit schedule established under ICES' Internal Audit Policy.

Tracking Approved Linkages of Personal Health Information

ICES uses the ICES Project PIA log to track all approved linkages of personal health information. Maintained by the Privacy and Legal Administrator, the log captures the name of the principal investigator of the associated project or research, who requested the linkages, the date the linkages were approved, and the nature of the personal health information linked.

23. Log of Approved Linkages of Records of Personal Health Information

| | | |
|---|--|---------------|
| APPLICATION | | |
| Not applicable <input type="checkbox"/> | Qualified application (<i>explain</i>) | |
| EXISTENCE & IMPLEMENTATION | | |
| ICES vehicle(s) | Name | Status |
| | a. ICES Project PIA Log | Implemented |
| | b. DAS Projects Log | Implemented |
| DESCRIPTION | | |
| ICES has developed and maintains logs of approved linkages of personal health information. Information captured in the logs includes: | | |
| <ul style="list-style-type: none"> • Requestor name; • Approval date; and • Description of the personal health information approved for linking. | | |

24. Policy & Procedures with Respect to De-Identification & Aggregation

| | | |
|---|--|---------------|
| APPLICATION | | |
| Fully applicable <input checked="" type="checkbox"/> | Qualified application (<i>explain</i>) | |
| EXISTENCE & IMPLEMENTATION | | |
| ICES vehicle(s) | Name | Status |
| | a. Protection of ICES Data Policy | Implemented |
| | b. Privacy Incident Management Policy | Implemented |
| | c. Internal Audit Policy | Implemented |
| | d. Cohort Disclosure Procedures | Implemented |
| | e. Creation of Summary Data Procedure | Implemented |
| | f. Re-identification Risk Assessment Procedure | Implemented |
| g. Verifying and Posting Risk-Reduced Coded Data to IDAVE | Implemented | |
| DESCRIPTION | | |
| <p>ICES' Protection of ICES Data Policy stipulates that personal health information may not be used or disclosed if other information, namely de-identified or aggregate information, will serve the identified purpose. The exception is disclosure of cohort lists for external, publicly funded research that cannot be reasonably conducted within ICES.</p> <p>The Protection of ICES Data Policy identifies the following specific scenarios in which de-identified information may be used or disclosed:</p> <ul style="list-style-type: none"> • Incorporation of results into publications and reports; and • Delivery of results to external researchers for their use and retention outside ICES. <p>Investigators who are not ICES scientists are permitted to collaborate on ICES projects, but may use aggregate information only (in ICES' policies, referred to as "summary" information). External researchers who wish to work independently are permitted to use record-level information, but on two conditions. They must do so on a secure ICES desktop (called "IDAVE"), and the information first must be adjusted by an ICES analyst until it presents a low risk of identification (referred to as "risk-reduced coded data").</p> <p>ICES' Protection of ICES Data Policy also addresses the topic of cell sizes of fewer than five – or "small cells." The policy, which takes into account restrictions in data sharing agreements as well as research plans, prohibits inclusion of small cells in any report or publication of the results of any ICES project or any research, whether conducted at ICES or by an external researcher.</p> <p>The policy contains definitions of de-identified information, aggregate - "summary"- information, risk-reduced coded data and small cells. All have regard to, and are consistent with, the meaning of "identifying information" in section 4(2) of PHIPA.</p> <p>The Creation of Summary Data Procedure defines the manner in which information must be grouped, collapsed or averaged in order to constitute aggregate information, and identifies the agents responsible. Data sharing agreements and ICES' policies, procedures and practices permit this form of information to include small cells. For this reason, the procedure does not also include steps to suppress small cells or assess the potential to identify individuals.</p> <p>The Verifying and Posting Risk-Reduced Data to IDAVE defines the process for reducing the identifiability of the record-level data that is prepared for external researchers. The procedure, which is carried out by an ICES analyst, identifies the information that must be removed, encrypted and/or truncated in order to create risk-reduced coded data,</p> <p>ICES' Re-identification Risk Assessment Procedure defines the information that must be removed, encrypted and/or truncated in order to constitute de-identified information. That procedure also specifically provides for review of the resulting information prior to disclosure. The review, which is performed and documented by an ICES analyst, is conducted against specific criteria identified in the procedure, which are designed to ensure no individual is identified and that it is not reasonably foreseeable in the circumstances the information could be used, either alone or in combination with other information, to identify an individual.</p> <p>All ICES agents and external researchers are required to sign confidentiality agreements that prohibit them from using information, whether aggregate or de-identified, alone or in combination, to identify any individual. This</p> | | |

includes attempting to decrypt information that is encrypted, attempting to identify an individual based on unencrypted information and attempting to identify an individual based on prior knowledge. The agreements provide that ICES may terminate access to the information in the event of any violation of this condition.

Compliance with the policy and any procedures is mandatory for all agents. Agents must notify an ICES Privacy SME at the first reasonable opportunity if they breach, or believe there has been a breach of, the policies or procedures, in accordance with ICES' Privacy Incident Management Policy. Violations including breach are subject to a range of disciplinary actions, including warning, temporary or permanent loss of access privileges, legal sanctions and termination of employment or contract with ICES. Disciplinary actions are enforced by ICES' Director, Human Resources in consultation with ICES' Chief Privacy and Legal Officer under ICES' Discipline and Corrective Action Policy. Compliance is subject to annual audit by an ICES Privacy SME and an audit schedule established under ICES' Internal Audit Policy.

25. Privacy Impact Assessment Policy & Procedures

| APPLICATION | | |
|--|--|-------------|
| Fully applicable <input checked="" type="checkbox"/> | Qualified application (<i>explain</i>) | |
| EXISTENCE & IMPLEMENTATION | | |
| ICES vehicle(s) | Name | Status |
| | a. Privacy Impact Assessment Policy | Implemented |
| | b. Privacy Impact Assessments Log | Implemented |
| | c. ICES PIA Form – New ICES Data Holding | Implemented |
| | d. ICES PIA Form – General | Implemented |
| | e. ICES PIA Form – ICES Data Disclosure | Implemented |
| | f. ICES PIA Form – Third Party Research | Implemented |
| | g. ICES PIA Form – Service Provider | Implemented |
| | h. ICES Project PIA Form | Implemented |
| | i. Internal Audit Policy | Implemented |
| | j. Privacy Audit Log & Instructions Workbook | Implemented |
| | k. Policy Framework & Governance Policy | Implemented |
| | l. Privacy Incident Management Policy | Implemented |
| | m. Discipline & Corrective Action Policy | Implemented |
| DESCRIPTION | | |
| <p>ICES' Privacy Impact Assessment Policy identifies the circumstances under which privacy impact assessments must be conducted. Under the policy, a privacy impact assessment is required before the implementation of any change that will substantially affect the collection, use or handling of personal health information by or on behalf of ICES. There are no exceptions. The policy provides an illustrative list of triggers, which include:</p> <ul style="list-style-type: none"> Proposed establishment of a new data holding; Establishing or changing a service relationship that involves personal health information; and Introducing or substantially changing a business process, information system or technology that involves personal health information. <p>The policy stipulates that privacy impact assessments are to be conducted prior to implementation of the change. They must be initiated at the conceptual design stage and then reviewed and amended, as necessary, at both the detailed design and pre-implementation stages. Under the policy, responsibility for requesting a privacy impact assessment rests with the person responsible for the data holding, process, system or service relationship involved. That person must contact ICES' Privacy and Legal Office to request a privacy impact assessment before proceeding. The Chief Privacy and Legal Officer has distributed day-to-day responsibility for the conduct of privacy impact assessments across the Privacy and Legal Office, and this is communicated on the privacy page of the ICES intranet. For example, a particular Privacy SME is responsible for assessing new data holdings and is identified as the first point of contact for requesting a privacy impact assessment in that scenario. When a request for a privacy impact assessment is received, the designated ICES Privacy SME is then responsible for conducting, reviewing and/or amending the privacy impact assessment, with oversight by the Chief Privacy and Legal Officer and support from an ICES Security SME, as required.</p> <p>ICES has created a suite of forms to guide privacy impact assessments. Tailored according to scenario, the forms address:</p> <ul style="list-style-type: none"> The data holding, information system, technology or program at issue; | | |

- The nature and type of personal health information involved and its sources;
- The purpose and rationale for collection, use or disclosure;
- The flow of personal health information;
- Legal authority for each collection, use and disclosure of personal health information;
- Limitations imposed on collection, use and disclosure;
- Whether or not personal health information will be linked to other information;
- Retention period;
- Secure manner in which the personal health information will be retained, transferred and disposed of;
- Administrative, technical and physical safeguards, including functionality for logging access, use, modification and disclosure of personal health information and functionality for auditing to detect unauthorized use or disclosure;
- Privacy risks and mitigation strategies; and
- Recommendations arising from privacy impact assessments and associated responsibilities of agents, including compliance oversight and timelines.

ICES has established a log of privacy impact assessments, which captures the following:

- Responsible Privacy SME;
- The timeframe within which a particular privacy impact assessment needs to be completed;
- Privacy impact assessments that have been completed;
- Privacy Impact assessments that have been initiated but not completed; and
- Privacy impact assessments that were evaluated and determined not required and why.

The privacy impact assessment forms all include instructions to Privacy SMEs to reflect assessments and their status in the Privacy Impact Assessments Log. Privacy impact assessments may be marked as closed only after the Privacy SME is satisfied all recommendations have been addressed.

Implementation and effectiveness of the Privacy Impact Assessment Policy and associated forms is subject to audit under ICES' Internal Audit Policy. Under that policy, the Chief Privacy and Legal Officer is required to establish an audit schedule that includes an audit of the Privacy Impact Assessment Policy and associated procedures each year. This would include testing to verify the quality and continued accuracy of specific privacy impact assessments as well as completion rates. The privacy audit procedures, which are defined in the Privacy Audit Log and Instructions Workbook, provide, in turn, for correction of deficiencies detected through an audit.

Compliance with the policy and its procedures is mandatory for all agents. Agents must notify an ICES Privacy SME at the first reasonable opportunity if they breach, or believe there has been a breach of, the policies or procedures, in accordance with ICES' Privacy Incident Management Policy. Violations including breach are subject to a range of disciplinary actions, including warning, temporary or permanent loss of access privileges, legal sanctions and termination of employment or contract with ICES. Disciplinary actions are enforced by ICES' Director, Human Resources in consultation with ICES' Chief Privacy and Legal Officer under ICES' Discipline and Corrective Action Policy. Compliance is subject to annual audit by an ICES Privacy SME and an audit schedule established under ICES' Internal Audit Policy.

26. Log of Privacy Impact Assessments

| | | |
|--|-------------------------------------|--|
| APPLICATION | | |
| Fully applicable | <input checked="" type="checkbox"/> | Qualified application (<i>explain</i>) |
| EXISTENCE & IMPLEMENTATION | | |
| ICES vehicle(s) | Name | Status |
| | a. Privacy Impact Assessments Log | Implemented |
| DESCRIPTION | | |
| ICES has defined and implemented a log of privacy impact assessments. Information captured in the log includes: | | |
| <ul style="list-style-type: none"> • Privacy impact assessments that have been completed; • Privacy Impact assessments that have been initiated but not completed; • Privacy impact assessments that were evaluated and determined not required and why; • The associated data holding, information system, technology, program or process; • Target date for completion; • Actual date of completion; | | |

- The ICES Privacy SME responsible for determining whether or not a privacy impact assessment is required and, if so, completing or ensuring the completion of the privacy impact assessment; and
- Existence and status of any recommendations.

The log includes a Recommendations tracking sheet, which captures for each recommendation:

- The associated privacy impact assessment;
- The agents responsible for addressing the recommendation;
- The manner in which it has been agreed that each recommendation will be addressed; and
- The date as of which the recommendation was or is expected to be addressed.

27. Policy & Procedures in Respect of Privacy Audits

| | | |
|--|--|---------------|
| APPLICATION | | |
| Fully applicable <input checked="" type="checkbox"/> | Qualified application (<i>explain</i>) | |
| EXISTENCE & IMPLEMENTATION | | |
| ICES vehicle(s) | Name | Status |
| | a. Internal Audit Policy | Implemented |
| | b. Privacy Audit Procedure | Implemented |
| | c. Privacy Audit Log & Instructions Workbook | Implemented |
| | d. Privacy Audit Report Form | Implemented |
| DESCRIPTION | | |
| <p>ICES' Internal Audit Policy and Privacy Audit Procedure identify the purpose and frequency of privacy audits. Under the policy, ICES must conduct an audit to test compliance with each of its privacy policies and their associated procedures every year. This includes a requirement to audit ICES' policies, procedures and practices governing agent access and use of personal health information described at Part 1(8) of Section B of this report. The Chief Privacy and Legal Officer has overall responsibility for implementation of the policy. This specifically includes responsibility for the appointment and oversight of appropriately skilled agents to conduct audits and the establishment of an audit schedule.</p> <p>The ICES Privacy Audit Log and Instructions Workbook and Privacy Audit Report Forms are designed to guide and document audits. The report forms are tailored by audit type, but consistently address the following:</p> <ul style="list-style-type: none"> • The nature (e.g. document reviews, interviews) and scope of the audit; • Responsible auditor; • Selection criteria; • Audit findings; • Recommendations; • Remedial action and associated responsibilities, timing and status; and • Whether or not notice will be provided. <p>Topics common to all privacy audits are addressed on the general instructions page for auditors at the front of the ICES Privacy Audit Log and Instructions Workbook. These topics include:</p> <ul style="list-style-type: none"> • The process, form and content for giving notice of a planned audit; • Content and responsibility for maintaining audit files; • Location of audit files; • Responsibility for making and communicating audit findings and recommendations, and the timing, manner and content of those communications; • Responsibility and a timeline for establishing and carrying out action plans to address recommendations; • Responsibility and a timeline for monitoring the implementation and effectiveness of action plans; • Approval and reporting of audit findings, which include a requirement to report high risk findings to ICES' Chief Executive Officer; and • Timing and required documentation for closure of audit files. <p>The Instructions sheet also addresses maintenance of the Privacy Audit Log, including storage location of the log and audit files and auditors' responsibility for:</p> <ul style="list-style-type: none"> • Maintenance of the log; | | |

- Communicating and tracking recommendations that arise from privacy audits;
- Documentation of audits.

Agents who conduct audits have a duty to report any breaches or suspected breaches detected at the first reasonable opportunity under ICES' Privacy Incident Management Policy.

28. Log of Privacy Audits

| | | |
|--|--|---------------|
| APPLICATION | | |
| Fully applicable <input checked="" type="checkbox"/> | Qualified application (<i>explain</i>) | |
| EXISTENCE & IMPLEMENTATION | | |
| ICES vehicle(s) | Name | Status |
| | a. Privacy Audit Log & Instructions Workbook | Implemented |
| | b. Privacy Audit Report Form | Implemented |
| DESCRIPTION | | |
| <p>ICES has defined a log of privacy audits that have been completed. Information captured in the log and report forms include:</p> <ul style="list-style-type: none"> • The nature and type of privacy audit conducted; • The date the privacy audit was completed; • The agent responsible for completing the privacy audit; • Recommendations arising from the privacy audit; • The agent responsible for addressing each recommendation; • The date each recommendation was or is expected to be addressed; and • The manner in which each recommendation was or is expected to be addressed. | | |

29. Policy & Procedures for Privacy Breach Management

| | | |
|---|---|---------------|
| APPLICATION | | |
| Fully applicable <input checked="" type="checkbox"/> | Qualified application (<i>explain</i>) | |
| EXISTENCE & IMPLEMENTATION | | |
| ICES vehicle(s) | Name | Status |
| | a. Privacy Incident Management Policy | Implemented |
| | b. Privacy Incident Log & Report Forms Workbook | Implemented |
| | c. Internal Audit Policy | Implemented |
| | d. Discipline & Corrective Action Policy | Implemented |
| DESCRIPTION | | |
| <p>ICES' Privacy Incident Management Policy and associated procedures address the process to be followed for the identification, reporting, containment, notification, investigation and remediation of privacy breaches. The definition of privacy breach encompasses any collection, use, disclosure, copying, modification, disposal, loss, theft or other act or failure to act, involving personal health information, or information derived from it, such as de-identified information, that makes personal health information subject to unauthorized copying, modification or disposal or that is not in accordance with:</p> <ul style="list-style-type: none"> • PHIPA or its regulation; • ICES' privacy or policies as a prescribed entity; or • Any data sharing or other agreement governing ICES' handling of the personal health information. <p>Under the policy, every agent is required to report such events to an ICES Privacy SME at the first reasonable opportunity. Events are considered detected and reportable, and subject to this policy and its associated procedures, once suspected. This includes events reported and handled initially as information security breaches.</p> <p>Agents who detect or suspect a privacy breach are required to report it to the ICES Privacy SME at the ICES location most closely associated with the breach. They are required to do so immediately. The policy stipulates that contact is to be made verbally, wherever practicable, and otherwise by email. In the absence of an ICES Privacy SME, reports should be made to ICES' Chief Privacy and Legal Officer. The identity and contact information for ICES</p> | | |

Privacy SMEs as well as the Chief Privacy and Legal Officer is provided, and accessible to all agents, on the privacy page of ICES' intranet. The ICES Privacy SME creates an entry for the report on the Privacy Incidents Log and establishes a file on the secure Privacy folder on the ICES network.

Under the procedures, an ICES Privacy SME is then required to launch a Privacy Breach Report Form and commence an investigation. The Form, which guides the investigation and must be completed, captures the date of the report, the nature and extent of the personal health information involved and the determination whether or not a breach has, in fact, occurred. Where it has, the investigating Privacy SME is required to report this immediately to the Chief Privacy and Legal Officer, who must notify ICES' Chief Executive Officer. Whether that report is provided verbally or in writing depends on the complexity of the facts to be relayed, and is decided by the Chief Privacy and Legal Officer. The information provided to the Chief Executive Officer includes the nature and extent of the personal health information involved, containment measures and the identity of any parties who must be notified and a plan for how notice will be given. This is subject to the general requirement that notice to those parties should be given at the earliest reasonable opportunity.

The procedures stipulate that breaches, including suspected breaches, be immediately contained by the responsible ICES Privacy SME. The procedures specify the approach and objectives for containment. At a minimum, the ICES Privacy SME must determine whether or not the breach resulted in copies of personal health information being made, and if so, to ensure and document their secure return or destruction. Where records are destroyed, the date, time and method of destruction must be captured. Containment must also prevent further unauthorized access, use or disclosure of the personal health information or other personal health information. The nature of the containment measures taken and who is responsible for taking them must be documented on the Privacy Breach Report Form, and sent to the Chief Privacy and Legal Officer for review and approval.

Where an investigation indicates there has been a privacy breach involving personal health information, the procedures require ICES to notify the person or organization that disclosed that personal health information to ICES. The ICES Privacy SME responsible for handling the breach is required to prepare a written notification plan for review by the Chief Privacy and Legal Officer. The plan must take into account any particular arrangements relevant to notification contained in the data sharing agreement. It must also identify the appropriate ICES agent to deliver the notice and its format, the nature of the personal health information at issue, the measures that have been, and will be, implemented to contain the breach, including investigation and remediation. Once approved, the Chief Privacy and Legal Officer is required to inform ICES' Chief Executive Officer of the notification plan, and ensure it is carried out and addresses all of the information identified in the plan.

Where requested by an organization, ICES may agree to notify third parties or individuals on their behalf, but only with the approval of ICES' Chief Privacy and Legal Officer and Chief Executive Officer.

Under the procedures, the responsible ICES Privacy SME is required to commence an investigation once a breach has been contained. The objective is to gain a more precise understanding of the breach, including the personal health information involved, and identify the root cause(s) and measures to address them. The ICES Privacy SME is empowered to make whatever inquiries are reasonably required to achieve these objectives, which can include document review, interviews and physical inspections. All must be reflected in the Privacy Breach Report Form and supported by documentation, which must be saved to the incident file.

The ICES Privacy SME is responsible for communicating recommendations and working with agents to finalize action plans to address them, consulting with the Chief Privacy and Legal Officer as necessary. The ICES Privacy SME then reflects what has been agreed in a written plan, which is sent to the agent. This includes the names of those responsible as well as the timeline, which cannot exceed 45 days unless approved by the Chief Privacy and Legal Officer. It is the responsibility of the agents identified on the plan to assign others, as required, to carry it out; the ICES Privacy SME monitors to ensure compliance with the agreed timeline and reflects this in the Privacy Incidents Log. Where relevant, an ICES Security SME will be involved in developing, or carrying out, action plans.

Once all remedial actions and notifications are complete, the ICES Privacy SME ensures all supporting documentation is saved to the file, updates the Privacy Breach Report Form and sends a link to the Chief Privacy and Legal Officer to request approval to close the file. The Form, which is reviewed and endorsed by the Chief Privacy and Legal Officer, captures all the key facts associated with the breach, including recommendations and their status. Once approval is received, the ICES Privacy SME reflects this in the Privacy Incidents Log, which is maintained to track all breaches and associated recommendations and timelines.

Compliance with the policy and its procedures is mandatory for all agents. Agents must notify an ICES Privacy SME at the first reasonable opportunity if they breach, or believe there has been a breach of, the policies or procedures, in accordance with ICES' Privacy Incident Management Policy. Violations including breach are subject to a range of

disciplinary actions including warning, temporary or permanent loss of access privileges, legal sanctions and termination of employment or contract with ICES. Disciplinary actions are enforced by ICES' Director, Human Resources in consultation with ICES' Chief Privacy and Legal Officer under ICES' Discipline and Corrective Action Policy. Compliance is subject to annual audit by an ICES Privacy SME and an audit schedule established under ICES' Internal Audit Policy.

30. Log of Privacy Breaches

| APPLICATION | | |
|--|---|--|
| Fully applicable | <input checked="" type="checkbox"/> | Qualified application (<i>explain</i>) |
| EXISTENCE & IMPLEMENTATION | | |
| ICES vehicle(s) | Name | Status |
| | a. Privacy Incident Log & Report Forms Workbook | Implemented |
| DESCRIPTION | | |
| <p>ICES maintains a log and report form, which together capture:</p> <ul style="list-style-type: none"> • The date of the privacy breach; • The date the privacy breach was identified or suspected; • Whether the privacy breach was internal or external; • The nature of the personal health information involved and the nature and extent of the privacy breach; • The date the privacy breach was contained and the nature of the containment measures; • The date the health information custodian or other person or organization that disclosed the information was notified; • The date investigation of the privacy breach was completed; • The agent responsible for conducting the investigation; • Recommendations arising from the investigation; • The date each recommendation was, or is expected to be, addressed; • Responsibility for addressing recommendations; and • The manner in which each recommendation was, or is expected to be, addressed. | | |

31. Policy & Procedures for Privacy Inquiries & Complaints

| APPLICATION | | |
|---|---|--|
| Fully applicable | <input checked="" type="checkbox"/> | Qualified application (<i>explain</i>) |
| EXISTENCE & IMPLEMENTATION | | |
| ICES vehicle(s) | Name | Status |
| | a. Privacy Information, Inquiries & Complaints Policy | Implemented |
| | b. Privacy Inquiries & Privacy Complaints Log | Implemented |
| | c. Privacy Inquiry Report Form | Implemented |
| | d. Privacy Complaint Report Form | Implemented |
| | e. Privacy Inquiry & Privacy Complaints Procedures | Implemented |
| | f. Privacy Complaint Response 1 Template 1 A | Implemented |
| | g. Privacy Complaint Response 1 Template 1 B | Implemented |
| | h. Privacy Complaint Response 2 Template | Implemented |
| | i. Privacy Complaint Form | Implemented |
| DESCRIPTION | | |
| <p>ICES' Privacy Information, Inquiries and Complaints Policy in combination with the Privacy Inquiries and Privacy Complaints Procedures, Privacy Inquiries and Privacy Complaints Log, Privacy Inquiry Report Form, Privacy Complaint Report Form and letter templates address the process to be followed in the receiving, documenting, tracking and responding to privacy inquiries and complaints.</p> <p><u>Privacy Inquiries</u> Under the policy, privacy inquiry is defined and includes inquiries about ICES' compliance with PHIPA and its regulation and the policies, procedures and practices ICES implements as a prescribed entity. The policy requires</p> | | |

the Chief Privacy and Legal Officer to ensure that ICES' public website informs the public of their right to make a privacy inquiry to ICES, and provides a title, mailing address and format(s) for contacting ICES to enable this.

The policy requires the Chief Privacy and Legal Officer to establish procedures for the receipt, handling and documentation of privacy inquiries. The Privacy Inquiry and Complaints Procedures and associated log and report form have been devised for this purpose. Together they define the process for receiving and responding to privacy inquiries at ICES. Topics they address include:

- Responsibility for receipt and response;
- Documentation that is required to be completed and provided;
- Required content of the documentation;
- The format and content of response to privacy inquiries; and
- Roles and responsibilities of the Chief Privacy and Legal Officer, ICES Privacy SMEs and ICES Security SMEs.

All of the procedures, including documentation, are carried out or coordinated by ICES Privacy SMEs with oversight by ICES' Chief Privacy and Legal Officer.

Privacy Complaints

Under the policy, a privacy complaint is defined and includes concerns or complaints about ICES' compliance with PHIPA and its regulation and the policies, procedures and practices ICES implements as a prescribed entity. The policy requires the Chief Privacy and Legal Officer to ensure that ICES' public website informs the public of their right to make a privacy complaint to ICES or the Information and Privacy Commissioner of Ontario. Under the policy, the information on ICES' public website must include a title and mailing address for contacting both ICES and the IPC, as well as format(s) for communicating privacy complaints to ICES.

The policy also requires the Chief Privacy and Legal Officer to establish procedures for the handling and documentation of privacy complaints. The Privacy Inquiry and Complaints Procedures and associated log and report form have been devised for this purpose. Together they define the process for receiving and responding to privacy complaints at ICES. Topics they address include:

- Responsibility for receipt and response;
- Documentation that is required to be completed and provided;
- Required content of the documentation;
- The nature of information that must be requested from complainants; and
- Roles and responsibilities of the Chief Privacy and Legal Officer and ICES Privacy and Security SMEs.

Except for notification and approvals, which are the responsibility ICES' Chief Privacy and Legal Officer, all of the procedures outlined here are either carried out or coordinated by an ICES Privacy SME.

The procedures require a determination to be made whether or not a privacy complaint will be investigated and identify the agent responsible, timeline, process and criteria for doing so, and related documentation. Where the determination is that the privacy complaint does not warrant investigation, the procedures stipulate that a letter be sent to the complainant to acknowledge the complaint and advise them of the decision not to investigate. The template that has been developed for use in this scenario also advises complainants of their right to complain to the Information and Privacy Commissioner of Ontario and provides contact information to enable this. Where the determination is that investigation is warranted, the procedures stipulate that a letter be sent to the complainant to acknowledge the complaint, advise them of the decision to investigate and describe the investigation process, including the process for requesting further information from the complainant, the projected timeframe, and the nature of the documentation the complainant will be provided upon completion of the investigation. The procedures identify the agents responsible for sending these letters and associated timelines.

The procedures identify the agent responsible for investigating privacy complaints, as well as the process for planning and carrying out investigations. This includes a discussion of how investigations and associated findings must be documented and the content of that documentation, as well as responsibility for its creation, communication and approval. The procedures also define the process for addressing recommendations that arise from the investigations, with associated responsibilities, timelines and requirements for documentation. Also addressed is the topic of notification, with associated responsibilities, content requirements and timelines. This includes criteria for the notification of ICES' Chief Executive Officer and third parties, as well a template letter to complainants that speaks to investigative findings and recommendations, if any, as well as the right to complain to the Information and Privacy Commissioner of Ontario, with contact information to enable this.

The Privacy Information, Inquiries and Complaints Policy requires the Chief Privacy and Legal Officer to define procedures to track privacy complaints. The Privacy Inquiries and Privacy Complaints Log, Privacy Inquiries and Privacy Complaints Procedures, and Privacy Complaint Form have been designed, and work together to address logging, creation and retention of documentation, as well as responsibility for oversight and timely closure of recommendations.

Compliance & Enforcement

Compliance with the policy and its procedures is mandatory for all agents. Agents must notify an ICES Privacy SME at the first reasonable opportunity if they breach, or believe there has been a breach of, the policies or procedures, in accordance with ICES' Privacy Incident Management Policy. Violations including breach are subject to a range of disciplinary actions, including warning, temporary or permanent loss of access privileges, legal sanctions and termination of employment or contract with ICES. Disciplinary actions are enforced by ICES' Director, Human Resources in consultation with ICES' Chief Privacy and Legal Officer under ICES' Discipline and Corrective Action Policy. Compliance is subject to annual audit by an ICES Privacy SME and an audit schedule established under ICES' Internal Audit Policy.

32. Log of Privacy Complaints

| | | |
|--|---|---------------|
| APPLICATION | | |
| Fully applicable <input checked="" type="checkbox"/> | Qualified application (<i>explain</i>) | |
| EXISTENCE & IMPLEMENTATION | | |
| ICES vehicle(s) | Name | Status |
| | a. Privacy Information, Inquiries & Complaints Policy | Implemented |
| | b. Privacy Inquiries & Privacy Complaints Log | Implemented |
| | c. Privacy Complaint Report | Implemented |
| DESCRIPTION | | |
| <p>ICES maintains a log of privacy complaints received, which captures the following:</p> <ul style="list-style-type: none"> • Date received and type of complaint; • Decision whether or not to investigate and the date this decision is made; • Date the complainant is advised of the decision whether or not to investigate; • Investigator name; • Date of investigation commencement and completion; • Whether or not the investigation revealed deficiencies in ICES' processes; • Status of remedial action; and • Date the complainant is advised of the investigation findings and any remediation. <p>The information in the Privacy Complaints Log is supplemented by the more detailed Privacy Complaint Report, which is created for each privacy complaint ICES receives. Information captured in the Privacy Complaint Report includes:</p> <ul style="list-style-type: none"> • Specific deficiencies and recommendations identified by the investigation; • Agent responsible for addressing each recommendation; • Timeline for addressing each recommendation; and • Manner in which each recommendation will be addressed. | | |

Part 2 – Security Documentation

1. Information Security Policy

| APPLICATION | | |
|--|---|-------------|
| Fully applicable <input checked="" type="checkbox"/> | Qualified application (<i>explain</i>) | |
| EXISTENCE & IMPLEMENTATION | | |
| ICES vehicle(s) | Name | Status |
| | a. Security Framework & Governance Policy | Implemented |
| | b. Security Incident Management Policy | Implemented |
| | c. Internal Audit Policy | Implemented |
| | d. Information System Acquisition, Development & Maintenance Policy | Implemented |
| | e. Discipline & Corrective Action Policy | Implemented |
| DESCRIPTION | | |
| <p>ICES' Security Framework and Governance Policy establishes an overarching framework and responsibility for information security at ICES. Requirements of the policy specifically include:</p> <ul style="list-style-type: none"> • Establishment of a comprehensive information security program that consists of administrative, technical and physical safeguards aligned with established industry standards and practices, and that has sufficient documentary requirements to allow independent verification; • Ensuring that ICES takes reasonable steps to protect personal health information against theft, loss and unauthorized use or disclosure and protect records of personal health information against unauthorized copying, modification or disposal; • Conduct of organization-wide threat and risk assessments of all information assets, including personal health information, and project specific threat and risk assessments; and • Establishment of a documented methodology for assessing and remediating threats and risks and prioritizing their remediation. <p>The policy requires ICES' information security program to consist of control objectives and security policies, procedures and practices that address:</p> <ul style="list-style-type: none"> • Ongoing review of security policies, procedures and practices; • Information security training and awareness for all ICES staff; • Physical security; • Secure retention, transfer and disposal of records containing personal health information, including information contained on mobile devices, remote access and security of information at rest; • Access control and authorization, including business requirements, user access management, user responsibilities, network access control, operating system access control and application and information access control; • Systems acquisition, development and maintenance, including the security requirements of information systems, correct processing in applications, cryptographic controls, security of system files, security in development and support procedures and technical vulnerability management; • Monitoring, including maintenance and review of system control and audit logs and security audits; • Network security, including patch management and change management; • Acceptable use of information technology; • Back-up and recovery; • Security breach management; and • Protection against malicious and mobile code. <p>The policy also refers to more detailed policies and procedures implemented to address the above-noted matters.</p> <p>The policy stipulates that the information security infrastructure provide for:</p> <ul style="list-style-type: none"> • The transmission of personal health information over authenticated, encrypted and secure connections; • Security-hardened servers, firewalls; and demilitarized zones and other perimeter defenses; • Anti-virus, anti-spam and anti-spyware measures; • Intrusion detection and prevention systems; • Privacy and security enhancing technologies; and | | |

- Mandatory system-wide password-protected screen savers after a defined period of inactivity.

The policy also provides for continuous assessment and verification of ICES' information security program in order to deal with threats and risks to data holdings containing personal health information. ICES relies on its security audit program for such continuous assessment and verification. The program consists of assessments of the effectiveness of the administrative, technical and physical safeguards ICES has implemented. Specifically, audits assess compliance with ICES' security policies, procedures and practices, including those governing access to and use of personal health information, and include vulnerability assessments and penetration testing of ICES' information systems conducted by independent auditors.

ICES' Chief Executive Officer is ultimately accountable for ensuring the security of information at ICES and that agents comply with the security policies, procedures and practices. The Chief Privacy and Legal Officer has been delegated authority to approve and oversee the information security program. The Security Manager has been delegated authority to develop and implement the information security program, which includes implementation of administrative, technical and physical safeguards. The Senior Director, Information Technology, Finance and Corporate Projects has been delegated authority to approve and oversee the physical security of ICES' premises. The Facilities Manager has been delegated authority to develop and implement the physical security program.

Compliance with the above policy and its procedures is mandatory for all agents. Agents must notify ICES' Security Manager, or in the case of ICES Satellite Sites the Local Privacy and Security Officer, at the first reasonable opportunity if they breach, or believe there has been a breach of, the policy or procedures, in accordance with ICES' Security Incident Management Policy. Violations including breach are subject to a range of disciplinary actions, including warning, temporary or permanent loss of access privileges, legal sanctions and termination of employment or contract with ICES. Disciplinary actions are enforced by ICES' Director, Human Resources in consultation with the Chief Privacy and Legal Officer under ICES' Discipline and Corrective Action Policy. Compliance is subject to annual audit by the Security Manager and an audit schedule established under ICES' Internal Audit and Monitoring Policy.

2. Policy & Procedures for Ongoing Review of Security Policies, Procedures & Practices

| APPLICATION | | |
|---|--|-------------|
| Fully applicable <input checked="" type="checkbox"/> | Qualified application (<i>explain</i>) | |
| EXISTENCE & IMPLEMENTATION | | |
| ICES vehicle(s) | Name | Status |
| | a. Security Framework & Governance Policy | Implemented |
| | b. Internal Audit Policy | Implemented |
| | c. Security Monitoring Log & Report Forms Workbook | Implemented |
| | d. Policy Framework & Governance Policy | Implemented |
| | e. Discipline & Corrective Action Policy | Implemented |
| DESCRIPTION | | |
| <p>ICES' Internal Audit Policy and associated security audit procedures, which are contained in the Security Monitoring Log and Report Forms Workbook, provide for continuous monitoring of ICES' security policies, procedures and practices. Matters addressed in the policy and procedures include frequency, timeframe and the procedures for conduct of reviews, which must be conducted prior to each scheduled review of ICES policies, procedures and practices by the IPC, pursuant to section 45(4) of PHIPA. Ongoing monitoring is the joint responsibility of ICES' Chief Privacy and Legal Officer and the Security Manager. Required audit activities specifically include monitoring for continued alignment of ICES' security policies, procedures and practices against:</p> <ul style="list-style-type: none"> • Applicable IPC orders, guidelines, fact sheets and best practices; • Evolving industry security standards and best practices; • Technological advancements; • Amendments to PHIPA and its regulation; • Recommendations arising from privacy and security audits; • Recommendations arising from threat risk assessments and privacy impact assessments; • Recommendations resulting from investigations into privacy or security breaches; and • Consistency of security policies, procedures and practices with actual ICES practices and with ICES' privacy policies, procedures and practices. | | |

ICES' Policy Framework and Governance Policy governs revision, creation, communication and implementation of policies, procedures and practices at ICES and changes to them. The policy specifically addresses:

- The procedure and responsibility for amending or drafting policies, procedures and practices as a result of the review, and obtaining approval;
- The procedure and responsibility for internal communication of amended or new policies, including the method and nature of communication;
- The procedure and responsibility for reviewing and amending any external communication materials as a result of the amended or new policies.

At ICES, each policy and procedure has a designated "owner," who is responsible for ensuring the ongoing maintenance of the policy or procedure, and a designated "authority," who is responsible for overseeing formal review of the policy or procedure and approving amendments. The Chief Privacy and Legal Officer is the authority for security policies, procedures and practices. New or amended security policies, procedures and practices that affect general ICES operations or require broader communication must undergo review and approval by ICES faculty members and ICES' Operations Committee before final approval by the Chief Privacy and Legal Officer. Communication of amended or new security policies or procedures is the responsibility of the Chief Privacy and Legal Officer.

Compliance with the above policies, procedures and practices is mandatory for all agents. Violations including breach are subject to a range of disciplinary actions, including warning, temporary or permanent loss of access privileges, legal sanctions and termination of employment or contract with ICES. Disciplinary actions are enforced by ICES' Director, Human Resources in consultation with the Chief Privacy and Legal Officer under ICES' Discipline and Corrective Action Policy. Compliance is subject to annual audit by the Security Manager and an audit schedule established under ICES' Internal Audit Policy.

3. Policy & Procedures for Ensuring Physical Security of Personal Health Information

| APPLICATION | |
|--|---|
| Fully applicable <input checked="" type="checkbox"/> | Qualified application (<i>explain</i>) |
| EXISTENCE & IMPLEMENTATION | |
| ICES vehicle(s) | Name |
| | Status |
| | a. Physical Security Policy |
| | b. ICES-Central Physical Security SOP |
| | c. ICES-Central Visitor SOP - Electronic Access Badge |
| | d. ICES-Central Visitor SOP - Non-Electronic Access Badge |
| | e. Visitors Sign In/Out Sheet |
| | f. Visitors Policy |
| | g. Keyscan Vantage Access Control System |
| | h. Onboarding System |
| | i. Key Sign In Log |
| | j. Internal Audit Policy |
| | k. Security Incident Management Policy |
| | l. Discipline & Corrective Action Policy |
| DESCRIPTION | |
| ICES has defined a policy and associated procedures to address the physical safeguards required to protect personal health information against theft, loss and unauthorized use or disclosure, and protect records of personal health information against unauthorized copying, modification or disposal. | |
| Physical safeguards provided for under ICES' Physical Security Policy include controlled access to premises and locations where records of personal health information are retained, such as locked, restricted and/or monitored access. In addition, the policy provides for the creation of security zones, with progressive levels of security and the highest level preserved for locations where personal health information is held. | |
| Compliance with the policy and its procedures is mandatory for all agents. Agents must notify the Security Manager at the first reasonable opportunity if they breach, or believe there has been a breach of, the policy or procedures, in accordance with ICES' Security Incident Management Policy. Violations including breach are subject to a range of disciplinary actions, including warning, temporary or permanent loss of access privileges, legal sanctions and | |

termination of employment or contract with ICES. Disciplinary actions are enforced by ICES' Director, Human Resources in consultation with the Chief Privacy and Legal Officer under ICES' Discipline and Corrective Action Policy. Compliance is subject to annual audit by the Security Manager and an audit schedule established under ICES' Internal Audit Policy.

Access by Agent

The policy and procedures identify the various agents responsible for receiving, reviewing, granting and terminating access by agents to ICES' premises and to locations within the premises where records of personal health information are retained, including the levels of access that may be granted, which are outlined in the policy and procedures. The various responsible agents include supervisors, the Security Manager, the Director, Data Quality and Information Management, the Senior Director, Information Technology, Finance and Corporate Projects and the Facilities Manager. The policy and procedures also address:

- Criteria for determining level of access, based on the "need-to-know" principle (By default, agents are only granted medium security access, while ICES' IT and DQIM personnel are granted high-level access as they require such access for the performance of their duties;
- Time-limited access, where appropriate; and
- Provisioning of identification cards, access cards and/or keys by the Facilities Manager.

Required documentation and communication of the above is also identified in the procedures. Supervisors must submit a request for agents' access to the Facilities Manager in ICES' Onboarding System (the required information is set out in a form in ICES' Onboarding System and includes, among other details, that agent's name, department and role and access level requested as determined by the supervisor), which also documents any required confirmations of approval (the required content of confirmations is also set out in ICES' Onboarding System). Supervisors will also receive email confirmation of access requests triggered by the Facilities Managers through ICES' Onboarding System. The Facilities Manager will issue an identification card or access card programmed to allow access only to authorized locations within ICES' premises and for the required timeframe. The Facilities Manager must deliver the identification card or access card and/or keys to the agent in person.

Theft, Loss & Misplacement of Identification Cards, Access Cards & Keys

The policy and procedures set out the requirements and the process to be followed in the event of theft, loss and misplacement of identification cards, access cards and/or keys. The procedures require agents to notify ICES' Security Manager or the Facilities Manager at the first reasonable opportunity by email and must specify when and where the identification card, access card and/or keys were lost or misplaced. The Security Manager or Facilities Manager, as applicable, must immediately deactivate any electronic identification card or access cards. The Facilities Manager will issue a temporary or replacement identification card or access card and/or keys and must log the agent's name, card and/or key number, the date issued and the timeframe for return in the key log and/or card holder database, which are maintained and retained by the Facilities Manager. Where an agent fails to return an identification card or access card and/or keys, the Facilities Manager must contact the agent immediately to ensure they are returned, and for any electronic identification card or access card not returned, must also ensure it is deactivated.

Termination of Employment, Contractual or Other Relationship

The procedures require agents and their supervisors to notify a Human Resources Associate of the termination of the agent's employment, contractual or other relationship, and identify the procedure to be followed in terminating access. This includes a requirement that identification cards, access cards and/or keys be returned on the date of termination, at which time access to the premises must be terminated immediately by the Facilities Manager. Termination includes deactivation of any electronic identification cards or access cards, and ensuring keys have been returned.

Notification When Access is No Longer Required

The procedures outline the process to be followed when an agent no longer requires access to locations within ICES that contain personal health information, including a requirement that agents and their supervisors notify the Facilities Manager. Notification, the nature and format of which is specified in the procedures, must be provided on or before the date that access is no longer required. The Facilities Manager must immediately reprogram the electronic identification card or access card to terminate access to the restricted locations, and ensure all applicable keys issued to the agent are returned.

Audit of Agents with Access to the Premises

ICES requires the conduct of annual audits of agents with access to ICES' premises and to locations within the premises where records of personal health information are retained, in accordance with ICES' Internal Audit Policy. The purpose of the audit is to ensure that agents continue to have an employment, contractual or other relationship

with ICES and continue to require the same level of access and identify and remediate any unjustified access. The Security Manager is responsible for the conduct of the audits, in accordance with ICES' Internal Audit Policy and Security Audit Procedures.

Tracking & Retention of Documentation Related to Access to the Premises

The procedures identify systems used to log access approvals and changes, and assign responsibility to ICES' Facilities Manager and, where applicable, ICES' receptionist for the management of those systems. Documentation related to the receipt, review, approval and termination of access to ICES' premises and locations within the premises are stored in the Facilities Manager's electronic or paper files.

Visitors

ICES' Visitors Policy and associated procedures identify the agents responsible and the process to be followed in identifying, screening and supervising visitors. Each visitor has a designated host who, where applicable, must inform ICES' receptionist in advance of the visitor's arrival. The receptionist notifies the host when the visitor has arrived at ICES. Visitors are required to complete the visitor's log, recording their name, date and time of arrival, the agent(s) with whom they are meeting and the date and time of departure. Where a visitor requires an electronic access card or identification card with special access privileges, the host must complete a Track-IT ticket requesting that the Facilities Manager issue the card. The Visitors Policy specifies the identification that must be worn by visitors at all times.

The procedures address the duties of agents responsible for identifying, screening and supervising visitors. At a minimum, the host must ensure the visitor is accompanied at all times, wears the identification card issued to him/her and returns it upon departure. The host and ICES' receptionist are jointly responsible for ensuring the visitor completes the visitors log upon arrival and departure. Where it is discovered that a visitor has failed to complete the log, ICES' receptionist must contact the host to obtain the necessary information. Where a visitor has failed to return the identification card or access card, ICES' receptionist must contact the host, who must in turn follow up with the visitor to ensure the card is returned. If the card is lost or missing, ICES' receptionist must notify the Facilities Manager, who is required to deactivate any electronic card.

The procedures require that ICES' receptionist retain the visitors log in the receptionist's office and that the Facilities Manager retain other documentation related to the identification, screening or supervision of visitors in his/her office in a designated file.

4. Log of Agents with Access to the Premises of the Prescribed Person or Prescribed Entity

| | | |
|--|---|---------------|
| APPLICATION | | |
| Fully applicable <input checked="" type="checkbox"/> | Qualified application (<i>explain</i>) | |
| EXISTENCE & IMPLEMENTATION | | |
| ICES vehicle(s) | Name | Status |
| | a. ICES-Central Physical Security SOP | Implemented |
| | b. Onboarding System | Implemented |
| | c. Keyscan Vantage Access Control System | Implemented |
| | d. Track-IT System | Implemented |
| | e. Visitors Sign In/Out Sheet | Implemented |
| | f. ICES-Central Visitors SOP - Non Electronic Badge | Implemented |
| | g. ICES-Central Visitors SOP - Electronic Access Badge | Implemented |
| | h. Visitors Policy | Implemented |
| | i. Termination of Employment/Resignation & Discharge Policy | Implemented |
| | j. Internal Audit Policy | Implemented |
| k. Security Audit Log & Instructions Workbook | Implemented | |
| DESCRIPTION | | |
| ICES has defined procedures that address the requirement to maintain a log of agents granted approval to access the premises and the level of access granted. The required logs can be generated from the systems and processes identified above, and include: | | |
| <ul style="list-style-type: none"> Agent's name; | | |

- Level and nature of access;
- Locations within the premises to which access is granted;
- Date(s) access was granted;
- Date(s) identification cards, access cards or keys were provided, associated identification numbers and date(s) returned; and
- Date of next audit.

The systems and processes are subject to audit by the Security Manager under ICES' Internal Audit Policy and associated procedures contained in the Security Audit and Instructions Workbook.

5. Policy & Procedures for Secure Retention of Records of Personal Health Information

| | | |
|---|--|--|
| APPLICATION | | |
| Fully applicable | <input checked="" type="checkbox"/> | Qualified application (<i>explain</i>) |
| EXISTENCE & IMPLEMENTATION | | |
| ICES vehicle(s) | Name | Status |
| | a. ICES Data Management Policy | Implemented |
| | b. ICES Data Management Standard | Implemented |
| | c. Records Retention Schedule | Implemented |
| | d. Data Backup Policy | Implemented |
| | e. Destruction of ICES Data SOP | Implemented |
| | f. Privacy Impact Assessment Policy | Implemented |
| | g. ICES PIA Form - Service Provider | Implemented |
| | h. Security Incident Management Policy | Implemented |
| | i. Internal Audit Policy | Implemented |
| j. Discipline & Corrective Action Policy | Implemented | |
| DESCRIPTION | | |
| <p>ICES has developed policies, procedures and practices that collectively satisfy the requirements with respect to the secure retention of records of personal health information in paper and electronic format.</p> <p>The ICES Data Management Policy mandates that records of personal health information in both paper and electronic format be retained for only as long as necessary to fulfill the purposes for which they were collected. The policy requires that records of personal health information collected for research not be retained for longer than specified in the research plan approved by a research ethics board, and that records of personal health information collected pursuant to a data sharing agreement not be retained for longer than set out in the agreement. The policy provides for the establishment of a records retention schedule, which exists and is used to monitor and manage retention of personal health information in accordance with research plans and data sharing agreements.</p> <p>The policy stipulates that records of personal health information must be retained in a secure manner and assigns overall responsibility to the ICES' Director, Data Quality and Information Management. The policy and the ICES Data Management Standard identify the precise methods by which records of personal health information in paper and electronic format must be securely retained. Records of personal health information on paper must be stored in locked rooms and cabinets. Records of personal health information in electronic format on ICES systems must be stored on a server isolated from the ICES network. Records of personal health information on mobile media must be encrypted and stored in locked rooms and safes.</p> <p>The policy requires agents to take reasonable steps to ensure records of personal health information are protected against theft, loss and unauthorized use, disclosure, copying, modification or disposal. The detail of the policy and supporting standard, compliance with which is mandatory, effectively defines the reasonable steps, which include use of locked rooms, cabinets and safes, segregated servers with access controls and encryption of mobile media. As well, under the standard, personal health information with direct personal identifiers is retained only temporarily until data quality issues have been resolved and is then securely destroyed by an ICES-approved method.</p> <p><u>Retention by a Third Party Service Provider</u> ICES' Privacy Impact Assessment Policy addresses the selection and management of any third party service provider contracted to retain records of personal health information on ICES' behalf (e.g. for backup purposes). The policy stipulates that a privacy impact assessment must be conducted prior to establishing any such service relationship. The ICES PIA Form - Service Provider, completion of which is the responsibility of an ICES Privacy SME, has been defined for this purpose. The form is designed to:</p> | | |

- Address the circumstances under which and the purposes for which records of personal health information will be transferred to a third party for secure retention;
- Establish and detail an appropriately secure procedure and method for the transfer of records of personal health information to the third party and the retrieval of records from the third party, which meet the requirements of ICES' own policies, procedures and practices for secure transfer;
- Identify conditions for transfer and retrieval; and
- Ensure the services are appropriately documented in a service level agreement that includes mandatory privacy content in agreements with third party service providers as captured in an appendix in the ICES PIA Form – Service Provider, and which must be reviewed and approved by an ICES Privacy SME prior to transfer.

The ICES Data Management Policy addresses the documentation that must be maintained in relation to the transfer of records of personal health information to a third party service provider for retention. In particular, the agent responsible for ensuring the secure transfer, either the Director, Information Technology (IT) or delegate, is required to document the date, time and mode of transfer, and maintain a repository of written confirmations received from the third party service provider upon receipt of the records, as well as a detailed inventory of the personal health information being securely retained by or retrieved from the third party service provider.

Compliance with the above policies, procedures and practices is mandatory for all agents. Agents must notify ICES' Security Manager, or in the case of ICES Satellite Sites the Local Privacy and Security Officer, at the first reasonable opportunity if they breach, or believe there has been a breach of, the policies or procedures, in accordance with ICES' Security Incident Management Policy. Violations including breach are subject to a range of disciplinary actions, including warning, temporary or permanent loss of access privileges, legal sanctions and termination of employment or contract with ICES. Disciplinary actions are enforced by ICES' Director, Human Resources in consultation with the Chief Privacy and Legal Officer under ICES' Discipline and Corrective Action Policy. Compliance is subject to annual audit by the Security Manager and an audit schedule established under ICES' Internal Audit Policy.

6. Policy & Procedures for Secure Retention of Records of Personal Health Information on Mobile Devices

| | | |
|---|--|---------------|
| APPLICATION | | |
| Fully applicable <input checked="" type="checkbox"/> | Qualified application (<i>explain</i>) | |
| EXISTENCE & IMPLEMENTATION | | |
| ICES vehicle(s) | Name | Status |
| | a. Protecting Personal Health Information on Mobile Devices Policy | Implemented |
| | b. Internal Audit Policy | Implemented |
| | c. Discipline & Corrective Action Policy | Implemented |
| | d. Security Incident Management Policy | Implemented |
| | e. Privacy Impact Assessment Policy | Implemented |
| | f. ICES Project PIA Form | Implemented |
| | g. ICES Project PIA Review Procedure | Implemented |
| | h. Password Policy | Implemented |
| | i. Mobile Device Policy | Implemented |
| | j. ICES Data Management Policy | Implemented |
| | k. ICES Data Management Standard | Implemented |
| | l. Access to ICES Data Policy | Implemented |
| m. Remote Access Policy | Implemented | |
| DESCRIPTION | | |
| ICES has developed policies, procedures and practices to identify whether and in what circumstances ICES permits the retention of records of personal health information on mobile devices. The term "mobile device" is defined in ICES' Protecting Personal Health Information on Mobile Devices Policy. Compliance with the policies, procedures and practices is mandatory for all agents. Agents must notify ICES Security Manager, or at ICES Satellite Sites the Local Privacy and Security Officer, at the first reasonable opportunity if they breach, or believe there has been a breach of, the policies or procedures, in accordance with ICES' Security Incident Management Policy. Violations including breach are subject to a range of disciplinary actions, including warning, temporary or permanent loss of access privileges, legal sanctions and termination of employment or contract with ICES. Disciplinary actions are enforced by ICES' Director, Human Resources in consultation with the Chief Privacy and Legal Officer under ICES' | | |

Discipline and Corrective Action Policy. Compliance is subject to annual audit by the Security Manager and an audit schedule established under ICES' Internal Audit Policy.

ICES' Protection of Personal Health Information on Mobile Devices Policy authorizes collection and retention on mobile devices, subject to approval through a privacy impact assessment. Conducted by an ICES Privacy SME under ICES' Privacy Impact Assessment Policy, privacy impact assessments are guided by, and documented through, an ICES Project PIA Form. The agent requesting to collect or retain records of personal health information on a mobile device must submit an ICES Project PIA Form, the required content of which is defined in the form, to an ICES Privacy SME. The ICES Privacy SME must review the ICES Project PIA Form, taking into account the criteria and the requirements for approving or denying the request, including ensuring that other information – namely de-identified and/or aggregate information – will not serve the purpose and no more personal health information will be retained on the mobile device than is reasonably necessary to meet the identified purpose. The ICES Privacy SME must indicate approval by signing a copy of the ICES Project PIA Form and returning it by email to the agent.

ICES' Protecting Personal Health Information on Mobile Devices Policy and Mobile Device Policy establish conditions and restrictions on retention, which include:

- Retention of de-identified or aggregate information only if it will serve the purpose;
- De-identification to the fullest extent possible;
- A prohibition against retaining more personal health information on a mobile device than is reasonably necessary for the identified purpose;
- Use of encryption and complex passwords in accordance with ICES' Password Policy, and responsibility of assigned IT staff for encryption;
- Password-protected screen savers and responsibility for enabling them;
- Shortest possible retention period;
- Second layer of encryption and different complex password at the file level; and
- Ensuring the use of the personal health information subject to assessment has already been approved pursuant to ICES' Privacy Impact Assessment Policy and supporting procedures.

ICES' Protecting Personal Health Information on Mobile Devices Policy requires agents to retain personal health information on the mobile device in compliance with ICES' policies, procedures and practices relating to secure retention of records of personal health information, and to securely delete the information in accordance with the process and timeframe set out in the policies, procedures and practices. This policy and the ICES Data Management Policy both address steps and measures to protect personal health information on mobile devices against theft, loss and unauthorized use, disclosure, copying, modification or disposal.

ICES' Remote Access Policy sets out the circumstances under which remote access to personal health information is permitted and the associated requirements. Requests to access personal health information are required to be made through a Work From Home Application and Agreement and submitted to the agent's direct supervisor for consideration and approval. One of the conditions for approving access is that the agent has signed the associated agreement, thereby agreeing to a range of remote access safeguards such as taken measure to shield screens from "shoulder surfers". Agents are only permitted to access to the same personal health information remotely as they are permitted to access while on ICES' physical premise. The following are other conditions: Access to personal health information containing direct personal identifiers is permitted in a private space only; access to coded data is permitted from either a private or a semi-private space; and access to personal health information in any format in a public space is prohibited. Access must occur, and is technically feasible only, through ICES-managed remote access software.

7. Policy & Procedures for Secure Transfer of Records of Personal Health Information

| APPLICATION | | |
|--|---|-------------|
| Fully applicable <input checked="" type="checkbox"/> | Qualified application (<i>explain</i>) | |
| EXISTENCE & IMPLEMENTATION | | |
| ICES vehicle(s) | Name | Status |
| | a. ICES Data Management Policy | Implemented |
| | b. ICES Data Management Standard | Implemented |
| | c. Secure Transfer of Personal Health Information SOP | Implemented |
| | d. Contracts Database | Implemented |
| | e. DQIM Data Disclosure Log | Implemented |

| | | |
|--|---|-------------|
| | f. Managing Paper Chart Documents Procedure | Implemented |
| | g. Case List Request & Distribution Procedure | Implemented |
| | h. Security Incident Management Policy | Implemented |
| | i. Internal Audit Policy | Implemented |
| | j. Discipline & Corrective Action Policy | Implemented |

DESCRIPTION

ICES has developed policies, procedures and practices that collectively address the secure transfer of personal health information in paper and electronic format. The ICES Data Management Policy requires personal health information to be transferred in a secure manner, and the ICES Data Management Standard and the Secure Transfer of Personal Health Information SOP set out the secure methods of transferring records of personal health information in paper and electronic format that have been approved by ICES. The policy specifically requires agents to use only approved methods of transferring records of personal health information and prohibits all other methods. The standard and SOP outline the approved methods and associated procedures.

Electronic File & Mobile Media Transfers

The standard and SOP authorize transmission of records of personal health information through a secure and encrypted electronic file transfer system or encrypted mobile media. The standard and SOP outline the conditions for transfer. These include conduct and approval of a privacy impact assessment by an ICES Privacy SME that documents authority for the transfer of records. The SOP assigns responsibility to an ICES Data Covenantor for ensuring the records of personal health information are securely transferred. In the case of inbound transfers, ICES' receptionist is permitted to receive mobile media transferred to ICES by courier, but upon receipt, the media must be retrieved by an ICES Data Covenantor and stored in a secure data safe.

The SOP identifies the documentation that must be completed in relation to the secure transfer. For each inbound transfer an ICES Data Covenantor must update the Contracts Database, recording the date and mode of transfer and the recipient of the records of personal health information. The Contracts Database also contains the nature of personal health information transferred to ICES. For each outbound transfer, the ICES Data Covenantor must update the DQIM Data Disclosure Log, recording the date and mode of transfer, the recipient of the records and the nature of the personal health information transferred. The ICES Data Covenantor is required to file confirmations of receipt.

Paper & Email Transfers

The standard permits the transfer of records of personal health information by email or by paper only in the context of a specific type of ICES activity called "primary data collection." The procedures, conditions, roles and responsibilities and required documentation for paper and email transfers are set out in the Managing Paper Chart Documents and the Case List Request Distribution procedures. The procedures provide as follows: paper, which is only ever transferred from data custodians to ICES and never from ICES to them, must be sent by courier and any direct personal identifiers must be removed prior to transfer. Case lists sent by email must not contain direct personal identifiers beyond medical record numbers and must be contained in an encrypted, password-protected file, and the password sent separately from the file. The assigned ICES research coordinator or ICES Abstractor, as applicable, is responsible for ensuring the records are securely transferred. Confirmations of receipt by email are required in the case of email transfers.

The SOP together with the ICES Data Management Policy and the ICES Data Management Standard outline the administrative, technical and physical safeguards that must be implemented in transferring records of personal health information through each of the approved methods. The policy requires that the approved methods of secure transfer and associated procedures and safeguards be consistent with IPC orders, including Order HO-004 and Order HO-007; IPC guidelines, fact sheets and best practices, and evolving privacy and security standards and best practices.

Compliance with the above policy and procedures is mandatory for all agents. Agents must notify ICES' Security Manager, or at an ICES Satellite the Local Privacy and Security Officer, at the first reasonable opportunity if they breach, or believe there has been a breach of, the policy or procedures, in accordance with ICES' Security Incident Management Policy. Violations including breach are subject to a range of disciplinary actions, including warning, temporary or permanent loss of access privileges, legal sanctions and termination of employment or contract with ICES. Disciplinary actions are enforced by ICES' Director, Human Resources in consultation with the Chief Privacy and Legal Officer under ICES' Discipline and Corrective Action Policy. Compliance is subject to annual audit by the Security Manager and an audit schedule established under ICES' Internal Audit Policy.

8. Policy & Procedures for Secure Disposal of Records of Personal Health Information

| | | |
|---|--|---------------|
| APPLICATION | | |
| Fully applicable <input checked="" type="checkbox"/> | Qualified application (<i>explain</i>) | |
| EXISTENCE & IMPLEMENTATION | | |
| ICES vehicle(s) | Name | Status |
| | a. ICES Data Management Policy | Implemented |
| | b. ICES Data Management Standard | Implemented |
| | c. Destruction of ICES Data SOP | Implemented |
| | d. Information Media Destruction SOP | Implemented |
| | e. Privacy Impact Assessment Policy | Implemented |
| | f. ICES PIA Form – Service Provider | Implemented |
| | g. Internal Audit Policy | Implemented |
| | h. | |
| | i. Security Incident Management Policy | Implemented |
| | j. Privacy Incident Management Policy | Implemented |
| | k. Discipline & Corrective Action Policy | Implemented |
| DESCRIPTION | | |
| <p>The ICES Data Management Policy and related procedures address the secure disposal of records of personal health information in both paper and electronic format. The policy requires records of personal health information to be disposed of in a secure manner that is consistent with the definition in PHIPA and its regulation. The policy states that secure disposal means that records are disposed of in such a manner that their reconstruction is not reasonably foreseeable in the circumstances.</p> <p>The ICES Data Management Standard, Information Media Destruction SOP and Destruction of ICES Data SOP identify the precise methods for the secure disposal of records of personal health information in paper and electronic format, including various media. Records on paper must be disposed of by crosscut shredding or deposited into approved shredding bins for secure disposal by a third party service provider. Mobile devices or media must be wiped using secure overwrite utility software. Unserviceable mobile media must be physically destroyed by burning platters, degaussing or shredding to prevent reconstruction. Records on ICES servers must be permanently deleted. The policy requires that these secure disposal methods be consistent with PHIPA and its regulation, with IPC orders, including Order H0-001 and Order H0-006, and with IPC guidelines, fact sheets and best practices, including <i>Fact Sheet 10: Secure Destruction of Personal Information</i>.</p> <p>The standard and the two SOPs address the secure retention of records of personal health information pending their secure disposal. Records intended for disposal must be physically segregated from records intended for recycling, stored in designated areas, and retained in clearly marked cabinets, safes or bins. Records on paper, if not shredded by ICES staff, must be stored in designated bins distributed throughout ICES' premises until they are securely disposed of by a third party service provider. Shredding bins are clearly marked, opaque and locked and their contents cannot be accessed by ICES staff. ICES' Facilities Manager is responsible for ensuring the security of paper bins pending secure disposal of their contents. Mobile media intended for disposal must be clearly marked and stored in a locked room in a clearly marked safe until they are securely disposed of. ICES' IT Service Lead is responsible for ensuring the media is securely retained pending its secure disposal.</p> <p><u>Disposal by a Designated ICES Agent, Not a Third Party Service Provider</u></p> <p>Under the Destruction of ICES Data SOP, where a designated ICES agent, and not a third party service provider, is responsible for disposal of records of personal health information, the disposal must be carried out or coordinated by an ICES Data Covenantor or assigned IT staff within the timeframe specified in the data sharing agreement or Records Retention Schedule. The circumstances under which and conditions pursuant to which disposal is performed by an ICES Data Covenantor include physical destruction of CD-Rs and removal of electronic records on laptops and ICES systems. When records are contained on mobile media or devices other than CD-Rs or laptops, an ICES Data Converter must submit a Track-IT ticket to request disposal by assigned IT staff. Specific responsibilities of ICES Data Covenantors and IT staff with respect to secure disposal, including tracking of destruction dates and storage of certificates of destruction, are detailed in the Destruction of ICES Data SOP and Information Media Destruction SOP.</p> <p>Under the ICES Data Management Standard, personal health information with direct personal identifiers is retained only temporarily until data quality issues have been resolved and is then securely destroyed by an ICES-approved method.</p> | | |

The SOPs require ICES Data Covenantors to provide certificates of destruction to the data custodian no later than a specified time following the secure disposal. The certificates of destruction are required to:

- Identify the records of personal health information to be securely disposed of;
- Confirm the secure disposal of the records of personal health information;
- Set out the date, time and method of secure disposal employed; and
- Bear the name and signature of the agent(s) who performed the secure disposal.

Disposal by a Third Party Service Provider

ICES' Privacy Impact Assessment Policy addresses the selection and management of any third party service provider contracted to securely dispose of records of personal health information on ICES' behalf. The policy stipulates that a privacy impact assessment must be conducted prior to establishing any such service relationship. The ICES PIA Form – Service Provider, completion of which is the responsibility of an ICES Privacy SME, has been defined for this purpose. The form is designed to:

- Establish and detail an appropriately secure procedure and method for the transfer of records of personal health information to the third party service provider, which meet the requirements of ICES' own policies, procedures and practices for secure transfer;
- Identify conditions for transfer; and
- Ensure the services are appropriately documented in a service level agreement that includes mandatory privacy content as captured in the appendix to the ICES PIA Form – Service Provider, and which must be reviewed and approved by an ICES Privacy SME prior to transfer.

The ICES Data Management Policy addresses the documentation that must be maintained in relation to the transfer of records of personal health information to a third party service for secure disposal. In particular, the agent responsible for ensuring the secure transfer, either the Director IT or delegate in the case of personal health information on mobile media, or the Facilities Manager in the case of personal health information on paper, is required to document the date, time and mode of transfer, and maintain a repository of written confirmations received from the third party upon receipt of the records and a detailed inventory of the personal health information transferred for secure disposal.

Currently at ICES, secure disposal of paper and mobile media by a third party service provider is done onsite only and transfer is not required. For disposal of paper the Information Media Destruction SOP requires ICES' receptionist to track the date the third party service provider was onsite to perform the disposal and the date the certificate of destruction was received. The receptionist must provide the certificate of destruction to the Facilities Manager for storage in the Manager's office. For disposal of mobile media, the IT Service Lead is responsible for tracking and filing copies of certificates of destruction on a restricted electronic folder. Where a third party service provider does not provide a certificate of destruction within the required timeframe, the Facilities Manager or IT Service Lead, as applicable, must follow up to ensure the certificate is provided.

Compliance with the above policies, procedures and practices is mandatory for all agents. Agents must notify ICES' Security Manager, or at ICES Satellites the Local Privacy and Security Officer, at the first reasonable opportunity if they breach, or believe there has been a breach of, the policies or procedures, in accordance with ICES' Security Incident Management Policy. Violations including breach are subject to a range of disciplinary actions, including warning, temporary or permanent loss of access privileges, legal sanctions and termination of employment or contract with ICES. Disciplinary actions are enforced by ICES' Director, Human Resources in consultation with the Chief Privacy and Legal Officer under ICES' Discipline and Corrective Action Policy. Compliance is subject to annual audit by ICES' Security Manager and an audit schedule established under ICES' Internal Audit Policy.

9. Policy & Procedures Relating to Passwords

| | | |
|---------------------------------------|--|--|
| APPLICATION | | |
| Fully applicable | <input checked="" type="checkbox"/> | Qualified application (<i>explain</i>) |
| EXISTENCE & IMPLEMENTATION | | |
| ICES vehicle(s) | Name | Status |
| | a. Password Policy | Implemented |
| | b. Security Incident Management Policy | Implemented |
| | c. Internal Audit Policy | Implemented |
| | d. Discipline & Corrective Action Policy | Implemented |
| DESCRIPTION | | |

ICES' Password Policy addresses passwords for authentication and access to information systems, technologies, equipment, resources, applications and programs. The policy applies to all agents who access computing systems operated by ICES, including any default user account on systems or software owned, licenced or managed by ICES, whether such access is from an ICES-owned or personal computer.

The policy is consistent with orders, guidelines, fact sheets and best practices issued by the IPC, and industry standards. The policy defines:

- Minimum and maximum password length;
- Password composition, which must be a combination of upper and lower case letters, numbers and alphanumeric characters;
- Restrictions on re-use of prior passwords;
- Timed automated expiry and frequency of password change;
- Consequences following a defined number of failed login attempts, including account lockout;
- Imposition of system-wide password-protected screen saver after a defined period of inactivity; and
- Administrative, technical and physical safeguarding rules for agents to maintain confidentiality of passwords, including specific requirements to keep passwords private and secure, change passwords immediately if suspected they have become known to others, and to refrain from writing down, displaying, concealing, hinting at, providing, sharing or otherwise making passwords known to others.

Compliance with the above policy and procedures is mandatory for all agents. Agents must notify the Security Manager, or at ICES Satellite Sites the Local Privacy and Security Officer, at the first reasonable opportunity if they breach, or believe there has been a breach of, the policy or procedures, in accordance with ICES' Security Incident Management Policy. Violations including breach are subject to a range of disciplinary actions, including warning, temporary or permanent loss of access privileges, legal sanctions and termination of employment or contract with ICES. Disciplinary actions are enforced by ICES' Director, Human Resources in consultation with the Chief Privacy and Legal Officer under ICES' Discipline and Corrective Action Policy. Compliance is subject to annual audit by the Security Manager and an audit schedule established under ICES' Internal Audit Policy.

10. Policy & Procedure for Maintaining & Reviewing System Control & Audit Logs

| APPLICATION | | |
|---|--|-------------|
| Fully applicable <input checked="" type="checkbox"/> | Qualified application (<i>explain</i>) | |
| EXISTENCE & IMPLEMENTATION | | |
| ICES vehicle(s) | Name | Status |
| | a. System Control & Audit Log Policy | Implemented |
| | b. System Control & Audit Log SOP | Implemented |
| | c. System Control & Audit Log Standard | Implemented |
| | d. Security Audit SOP | Implemented |
| | e. Internal Audit Policy | Implemented |
| | f. Privacy Incident Management Policy | Implemented |
| | g. Security Incident Management Policy | Implemented |
| | h. Discipline & Corrective Action Policy | Implemented |
| DESCRIPTION | | |
| <p>ICES' System Control and Audit Log Policy provides for the creation, maintenance and ongoing review of system control and audit logs that are aligned with industry standards over time and commensurate with the amount and sensitivity of the personal health information maintained, the number and nature of agents with access, and the associated risks.</p> <p>ICES' System Control and Audit Log SOP requires ICES' information systems involving personal health information, including technologies, applications and programs, to be configured to log access, use, modification and disclosure. The types of events that require auditing and the nature and scope of the information to be captured in the system control and audit logs are set out in ICES' System Control and Audit Log Standard. These logs are required to contain the date and time personal health information is accessed and access is disconnected, as well as the user and computer identifiers, type of action performed such as retrieval, creation or deletion, date and time of the action, and any changes to values. Under the SOP, the Security Manager is responsible for ensuring required audits are conducted and the required information is captured in these logs, including its nature and scope.</p> <p>The consistency of these logs is ensured through provisions in ICES' System Control and Audit Log Policy and reinforced by the SOP, which also identifies the procedures for ensuring logs are protected from unauthorized</p> | | |

access, and assigns responsibility for protecting logs to the System/Database Administrator. The SOP requires the System/Database Administrator to retain these logs and identifies their location and the retention period. Review of these logs by the Security Manager, as well as by the System Information and Event Management Administrator and under what circumstances, and the review frequency and process, are also defined in the policy and SOP. These designated reviewers of logs are required to provide notification, at the first reasonable opportunity, of any privacy incidents or breaches under ICES' Privacy Incident Management Policy or security incidents or breaches under ICES' Security Incident Management Policy. The relationship between the SOP and ICES' Privacy Incident Management Policy and ICES' Security Incident Management Policy is identified in the SOP.

ICES' System Control and Audit Log SOP assigns responsibility to the Security Manager for addressing findings within specified timelines and monitoring to ensure the findings have been addressed, and identifies related documentary requirements. Also addressed in the SOP is how findings will be communicated by the Security Manager to the Manager or Director of IT and the timeframes for communication. The SOP assigns responsibility to the Security Manager for tracking the findings using the Security Incidents Log and monitoring to ensure the findings and any remediation steps have been addressed.

Compliance with the above policy and procedures is mandatory for all agents. Agents must notify the Security Manager, or at an ICES Satellite Site the Local Privacy and Security Officer, at the first reasonable opportunity if they breach, or believe there has been a breach of, the policy or procedures in accordance with ICES' Security Incident Management Policy. Violations including breach are subject to a range of disciplinary actions, including warning, temporary or permanent loss of access privileges, legal sanctions and termination of employment or contract with ICES. Disciplinary actions are enforced by ICES' Director, Human Resources, in consultation with the Chief Privacy and Legal Officer under ICES' Discipline and Corrective Action Policy. Compliance is subject to annual audit by the Security Manager and an audit schedule established under ICES' Internal Audit Policy.

11. Policy & Procedures for Patch Management

| APPLICATION | | |
|---|---|--|
| Fully applicable | <input checked="" type="checkbox"/> | Qualified application (<i>explain</i>) |
| EXISTENCE & IMPLEMENTATION | | |
| ICES vehicle(s) | Name | Status |
| | a. Patch Management Policy | Implemented |
| | b. Information Technology Change Management SOP | Implemented |
| | c. Security Incident Management Policy | Implemented |
| | d. Internal Audit Policy | Implemented |
| | e. Discipline & Corrective Action Policy | Implemented |
| DESCRIPTION | | |
| <p>ICES' Patch Management Policy addresses the implementation of patch management at ICES. Under the policy, ICES' IT Manager must assign responsibility to specific IT staff for monitoring the availability of patches and related patch management tasks. The policy identifies the frequency of monitoring and the associated procedure that must be followed. The policy requires assigned IT staff to determine whether and when to implement a patch, based upon criteria that are set out in the policy, and further identifies the process that must be followed in this regard. When it is determined a patch should not be implemented, the policy requires the assigned IT staff to document a description of the patch, the date it became available, the severity level, the information system to which the patch relates and the rationale for not implementing the patch. When it is determined a patch should be implemented, the policy identifies the priority and required timeframe for implementation based upon the severity level of the patch. The process for patch implementation is set out in ICES' Information Technology Change Management SOP, which identifies the agent responsible for implementation (i.e. the assigned Change Implementer), the circumstances in which patches must be tested, the timeframe for testing and the required documentation and responsibility for testing.</p> <p>The policy and SOP address the documentation that is required to be maintained with respect to patches that have been implemented and assigns responsibility for its maintenance to the designated IT staff. Minimum documentation content includes a description of the patch and its severity level, the date it became available, the system to which the patch relates, implementation date, agent responsible for implementation, test date, agents responsible for testing, and the test results.</p> <p>Compliance with the above policy and its procedures is mandatory for all agents. Agents must notify ICES' Security Manager, or at ICES Satellites the Local Privacy and Security Officer, at the first reasonable opportunity if they</p> | | |

breach, or believe there has been a breach of, the policy or procedures, in accordance with ICES' Security Incident Management Policy. Violations including breach are subject to a range of disciplinary actions, including warning, temporary or permanent loss of access privileges, legal sanctions and termination of employment or contract with ICES. Disciplinary actions are enforced by ICES' Director, Human Resources in consultation with the Chief Privacy and Legal Officer under ICES' Discipline and Corrective Action Policy. Compliance is subject to annual audit by ICES' Security Manager and an audit schedule established under ICES' Internal Audit Policy.

12. Policy & Procedures Related to Change Management

| | | |
|--|--|---------------|
| APPLICATION | | |
| Fully applicable <input checked="" type="checkbox"/> | Qualified application (<i>explain</i>) | |
| EXISTENCE & IMPLEMENTATION | | |
| ICES vehicle(s) | Name | Status |
| | a. Change Management Policy | Implemented |
| | b. Change Management Procedure | Implemented |
| | c. Request for Change Form (RFC) | Implemented |
| | d. Security Incident Management Policy | Implemented |
| | e. Internal Audit Policy | Implemented |
| | f. Discipline & Corrective Action Policy | Implemented |
| DESCRIPTION | | |
| <p>ICES' Change Management Policy and associated procedures address the receipt, review and approval or denial of requests to change the operational environment of ICES.</p> <p>The policy and procedures address:</p> <ul style="list-style-type: none"> • The request process, requirements and associated roles and responsibilities; • Receipt, review and approval or denial of change requests by an established Change Advisory Board comprised of agents from ICES' Information Technology, ICES' Privacy and Legal Office, which includes the Security Manager, Corporate Services and Research and Analysis; • The documentation that must be completed (i.e. a Request for Change Form or RFC) by the requestor and submitted to the Change Advisory Board, through a designed Change Coordinator, for review and approval; • Minimum documentation content requirements, which are defined in the RFCF, including the requestor's name, the change requested, the date the change was requested, the rationale/need for the change, the impact and, where applicable, the rationale for a decision not to implement the change; • Criteria and process for determining whether to approve or deny requests; • The manner in which decisions must be documented, and the method and format for communicating decisions to the requestor; • Responsibility of the change manager and Change Advisory Board for prioritizing and determining timelines for implementation of approved changes, and associated documentation; • The process and responsibility of the change implementer for implementing approved changes, and associated documentation; • Responsibility of the change manager for maintaining and updating documentation of changes that have been implemented, including a description of the change requested, the requestor's name, the change requested, the date the change was requested, the change priority, the date the change was implemented, responsibility of the change implementer for implementation, the date the change was tested, responsibility of the change implementer for testing, and the test results; and • The circumstances in which changes must be tested by the change implementer and associated time frame, procedures and documentation. <p>Compliance with the above policy and procedures is mandatory for all agents. Agents must notify the Security Manager, or at an ICES Satellite Site the Local Privacy and Security Officer, at the first reasonable opportunity if they breach, or believe there has been a breach of, the policy or procedures, in accordance with ICES' Security Incident Management Policy. Violations including breach are subject to a range of disciplinary actions, including warning, temporary or permanent loss of access privileges, legal sanctions and termination of employment or contract with ICES. Disciplinary actions are enforced by ICES' Director, Human Resources in consultation with the Chief Privacy and Legal Officer under ICES' Discipline and Corrective Action Policy. Compliance is subject to annual audit by the Security Manager and an audit schedule established under ICES' Internal Audit Policy.</p> | | |

13. Policy & Procedures for Back-Up & Recovery of Records of Personal Health Information

| APPLICATION | | |
|--|---------------------------------------|--|
| Fully applicable | <input checked="" type="checkbox"/> | Qualified application (<i>explain</i>) |
| EXISTENCE & IMPLEMENTATION | | |
| ICES vehicle(s) | Name | Status |
| | a. Data Backup Policy | Implemented |
| | b. Privacy Impact Assessment Policy | Implemented |
| | c. ICES Data Management Policy | Implemented |
| | d. ICES Data Management Standard | Implemented |
| | e. ICES PIA Form – Service Provider | Implemented |
| | f. Internal Audit Policy | Implemented |
| | g. Privacy Incident Management Policy | Implemented |
| DESCRIPTION | | |
| <p>ICES' Data Backup Policy addresses the backup and recovery of records of personal health information. The policy specifically addresses:</p> <ul style="list-style-type: none"> • Types of backup storage devices used; • Frequency with which personal health information is backed up; • Process and requirements for backup and recovery; • The need for the availability of backed-up records and the circumstances under which backed-up records will be made available; • Testing of backups and recovery procedures, and testing frequency and process; • Required documentation for backup, recovery and testing, the contents of which are defined in the applicable document or log; • Requirement to ensure backup storage devices are securely retained in a restricted area within ICES and timeframe for retention; • Responsibility for all of the above, which is assigned to ICES' Director, IT and designated system administrators. <p>The policy is required to be in compliance with ICES' policies, procedures and practices for the secure retention of records of personal health information, including the ICES Data Management Policy and the ICES Data Management Standard.</p> <p><u>Retention by a Third Party Service Provider</u></p> <p>ICES' Privacy Impact Assessment Policy addresses the selection and management of any third party service provider contracted to retain records of personal health information on ICES' behalf. This includes any third party service provider contracted to retain backed-up records. The policy stipulates that a privacy impact assessment must be conducted prior to establishing any such service relationship. The ICES PIA Form - Service Provider, completion of which is the responsibility of an ICES Privacy SME, has been defined for this purpose. The form is designed to:</p> <ul style="list-style-type: none"> • Establish and detail an appropriately secure procedure and method for the transfer of backed-up records of personal health information to the third party service provider and the retrieval of records from the third party service provider, which meet the requirements of ICES' own policies, procedures and practices for secure transfer; • Identify conditions for transfer and retrieval; and • Require that a written agreement be executed with the third party service provider that meets or exceeds appropriate mandatory privacy content, and which must be reviewed and approved by an ICES Privacy SME prior to transfer. <p>The ICES Data Management Policy addresses the documentation that must be maintained in relation to the transfer of backed-up records of personal health information to a third party service provider for retention. In particular, the agent responsible for ensuring the secure transfer – namely the Director, IT or delegate, as applicable – is required to document the date, time and mode of transfer and maintain a repository of written confirmations received from the third party service provider upon receipt of the records and a detailed inventory of the personal health information being securely retained by, or retrieved from, the third party service provider.</p> <p>Compliance with the above policies, procedures and practices is mandatory for all agents. Agents must notify the Security Manager, or at ICES Satellite Sites the Local Privacy and Security Officer, at the first reasonable opportunity</p> | | |

if they breach, or believe there has been a breach of, the policies or procedures, in accordance with ICES' Security Incident Management Policy. Violations including breach are subject to a range of disciplinary actions, including warning, temporary or permanent loss of access privileges, legal sanctions and termination of employment or contract with ICES. Disciplinary actions are enforced by ICES' Director, Human Resources in consultation with the Chief Privacy and Legal Officer under ICES' Discipline and Corrective Action Policy. Compliance is subject to annual audit by the Security Manager and an audit schedule established under ICES' Internal Audit Policy.

14. Policy & Procedures on the Acceptable Use of Technology

| | | |
|--|--|---------------|
| APPLICATION | | |
| Fully applicable <input checked="" type="checkbox"/> | Qualified application (<i>explain</i>) | |
| EXISTENCE & IMPLEMENTATION | | |
| ICES vehicle(s) | Name | Status |
| | a. Acceptable Use Policy | Implemented |
| | b. | |
| | c. | |
| | d. Change Management Policy | Implemented |
| | e. Change Management Procedures | Implemented |
| | f. Track-IT System | Implemented |
| | g. Personnel IT Equipment Request Form | Implemented |
| | h. Security Incident Management Policy | Implemented |
| | i. Internal Audit & Monitoring Policy | Implemented |
| j. Discipline & Corrective Action Policy | Implemented | |
| DESCRIPTION | | |
| <p>ICES' Acceptable Use Policy outlines the acceptable use of ICES' information systems. The policy applies whether or not equipment involved is owned, leased or operated by ICES.</p> <p>The policy defines uses that are permitted, uses that are prohibited and uses that are subject to prior approval. The policy does not detail the process for making or approving a request for any standard equipment, applications or programs. Requests for any of these are simply handled and documented through ICES' IT ticket system. The requestor must complete a Personnel IT Equipment Request Form, obtain the signature of his/her supervisor and, where applicable, the signatures of the Director of Finance and the relevant Senior Director, and submit the form through a Track-IT ticket to ICES' HelpDesk for processing by the assigned IT staff. The form requires, among other details, justification for the need of the equipment, application or program.</p> <p>If the equipment, application or program falls outside of ICES' standard list, the process for making and approving a request is set out in ICES' Change Management Procedures. The requestor is required to complete a Change Request Form, the required details of which are defined in the form. This form must be reviewed by a designated Change Advisory Board consisting of agents from ICES' Information Technology and ICES' Privacy and Legal Office, which includes the Security Manager. The procedures identify the criteria for approving or denying the request, as well as how decisions by the Change Advisory Board must be documented, including the reasons for the decision and any conditions on approval with which the requestor must comply, and how those decisions must be communicated to the requestor.</p> <p>Compliance with the above policies, procedures and practices is mandatory for all agents. Agents must notify the Security Manager at the first reasonable opportunity if they breach, or believe there has been a breach of, the policies or procedures, in accordance with ICES' Security Incident Management Policy. Violations including breach are subject to a range of disciplinary actions, including warning, temporary or permanent loss of access privileges, legal sanctions and termination of employment or contract with ICES. Disciplinary actions are enforced by ICES' Director, Human Resources in consultation with the Chief Privacy and Legal Officer under ICES' Discipline and Corrective Action Policy. Compliance is subject to annual audit by the Security Manager and an audit schedule established under ICES' Internal Audit Policy.</p> | | |

15. Policy & Procedures In Respect of Security Audits

| | | |
|--|--|---------------|
| APPLICATION | | |
| Fully applicable <input checked="" type="checkbox"/> | Qualified application (<i>explain</i>) | |
| EXISTENCE & IMPLEMENTATION | | |
| ICES vehicle(s) | Name | Status |
| | a. Internal Audit Policy | Implemented |

| | | |
|--|--|-------------|
| | b. Security Audit Procedure | Implemented |
| | c. Security Audit Log & Instructions Workbook | Implemented |
| | d. Security Audit Report Form | Implemented |
| | e. Security Incident Management Policy | Implemented |
| | f. Privacy Incident Management Policy | Implemented |

DESCRIPTION

ICES' Internal Audit Policy and Security Audit Procedure identify the types of security audits that are required to be conducted, and the purpose, scope, circumstances and frequency for each. It provides as follows:

Threat and Risk Assessments

ICES conducts Threat and Risk Assessments prior to implementing new technologies or making changes to existing technologies that could impact security. Threat and Risk Assessments are conducted to identify and address security weaknesses that could otherwise lead to Security Incidents.

Security Assessments

ICES conducts ad hoc security assessments to identify and address the security implications of requests made by Information Technology and others.

Vulnerability Assessments

ICES conducts quarterly vulnerability assessments to measure the overall security health of ICES systems by looking for unknown changes that have been made to those systems.

Penetration Testing

ICES conducts penetration tests prior to implementing new technologies or making changes to existing technologies that could impact security. Penetration tests are used to attempt to exploit vulnerabilities in ICES computer systems, networks and web applications to determine if unauthorized access or malicious activity is possible.

Ethical Hacks

ICES conducts quarterly ethical hacks to identify potential threats inside ICES environments by duplicating the intent and actions of malicious hackers.

Reviews of System Control and Audit Logs

ICES reviews system control and audit logs on a daily basis to detect malicious activity and identify internal and external threats.

Audits of ICES' Security Policies, procedures and practices

ICES audits each of its security policies and associated procedures every calendar year. Audits are conducted in order to:

1. Verify that policies and selected procedures are implemented and in place
2. Evaluate their effectiveness to meet the objectives of the policy, and
3. Correct deficiencies.

The Security Manager has overall responsibility for implementation of the policy. This is specified in the policy, as is the overarching responsibility of the Chief Privacy and Legal Officer for privacy and security. Responsibilities of the Chief Privacy and Legal Officer specifically include the selection and supervision of auditors and establishment of an audit schedule to fulfill the objectives of the policy.

The Security Audit Report Form is designed to hold report forms that guide audits. The template is tailored by audit type, but consistently addresses the following:

- The nature (e.g. document reviews, interviews) and scope of the audit;
- Responsible auditor;
- Selection criteria;
- Audit findings;
- Recommendations;
- Remedial action and associated responsibilities, timing and status; and
- Whether or not notice will be provided.

Topics common to all security audits are addressed on the general instructions page for auditors at the front of the ICES Security Audit Log and Instructions Workbook. These topics include:

- The process, form and content for giving notice of a planned audit;
- Content and responsibility for maintaining audit files;
- Location of audit files;
- Responsibility for making and communicating audit findings and recommendations, and the timing, manner and content of those communications;
- Responsibility and a timeline for establishing and carrying out action plans to address recommendations;
- Responsibility and a timeline for monitoring the implementation and effectiveness of action plans;
- Approval and reporting of audit findings, which include a requirement to report high risk findings to ICES' Chief Executive Officer; and
- Timing and required documentation for closure of audit files.

The Instructions sheet also addresses maintenance of the Security Audit Log, including storage location of the log and audit files and auditors' responsibility for:

- Maintenance of the log;
- Communicating and tracking recommendations that arise from privacy audits;
- Documentation of audits.

Agents who conduct audits have a duty to report any breaches or suspected breaches detected at the first reasonable opportunity under ICES' Security Incident Management Policy and, as applicable ICES' Privacy Incident Management Policy.

16. Log of Security Audits

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|--|---|---------------|
| APPLICATION | | |
| Fully applicable <input checked="" type="checkbox"/> | Qualified application (<i>explain</i>) | |
| EXISTENCE & IMPLEMENTATION | | |
| ICES vehicle(s) | Name | Status |
| | a. Security Audit Log & Instructions Workbook | Implemented |
| | b. Security Audit Report Form | Implemented |
| DESCRIPTION | | |
| ICES has a log and report forms that capture: <ul style="list-style-type: none"> • Nature and type of audit; • Completion date; • Responsible auditor; • Recommendations arising from the audit; • Agent responsible for addressing the recommendations; • Date each recommendation was or is expected to be addressed; and • The manner in which each recommendation was or is expected to be addressed. | | |

17. Policy & Procedures for Information Security Breach Management

| | | |
|--|--|---------------|
| APPLICATION | | |
| Fully applicable <input checked="" type="checkbox"/> | Qualified application (<i>explain</i>) | |
| EXISTENCE & IMPLEMENTATION | | |
| ICES vehicle(s) | Name | Status |
| | a. Security Incident Management Policy | Implemented |
| | b. Security Incident Log & Report Forms Workbook | Implemented |
| | c. Privacy Incident Management Policy | Implemented |
| | d. Privacy Incident Log & Report Forms Workbook | Implemented |
| DESCRIPTION | | |
| ICES' Security Incident Management Policy and associated procedures address the process to be followed for the identification, reporting, containment, notification, investigation and remediation of information security breaches. | | |

The definition of information security breach is defined in the policy and includes contravention of ICES' security policies, procedures and practices.

Under the policy, every agent is required to report such events at the first reasonable opportunity. Events are considered detected and reportable, and subject to this policy and its associated procedures, once suspected.

Agents who detect or suspect an information security breach are required to report to ICES' Security Manager, or if the breach is detected at an ICES Satellite, to the Local Privacy and Security Officer for that location. They are required to do so immediately. The policy stipulates that contact is to be made verbally, wherever practicable, and otherwise by email. In the absence of the Local Privacy and Security Officer at an ICES Satellite, reports should be made to ICES' Security Manager directly. The identity and contact information for ICES' Security Manager and the Local Privacy and Security Officers is provided, and accessible to all agents, on the Privacy & Legal Office page of ICES' intranet. The Security Manager or Local Privacy and Security Officer, as applicable, creates an entry for the report on the Security Incidents Log and establishes a file on the secure Information Security folder on the ICES network.

Under the procedures, Local Privacy and Security Officers are required to refer security breaches to the Security Manager for handling. The Security Manager is then required to launch a Security Breach Report Form and commence an investigation. The Form, which guides the investigation and must be completed, captures the date of the report, and whether or not any personal health information might be involved and the determination whether or not a security breach has, in fact, occurred. Where the initial investigation suggests that personal health information is involved, the Security Manager is required to refer the report to a Privacy SME for confirmation and potential handling. Where personal health information is, or is believed to have been, stolen, lost or accessed by unauthorized persons, the health information custodian or other organization that disclosed it to ICES will be notified at the earliest reasonable opportunity in accordance with ICES' Privacy Incident Management Policy and procedures.

The Security Manager is required to keep the Chief Privacy and Legal Officer apprised of the volume, nature and handling of security breaches through a weekly status report. Where the Security Manager judges a security breach has been caused by malfeasance or is otherwise significant for reasons of scale, scope or complexity or the potential to cause disruption, the Security Manager will report it to the Chief Privacy and Legal Officer immediately, who must evaluate and if the assessment is confirmed, notify ICES' Chief Executive Officer. Whether such reports are provided verbally or in writing depends on the complexity of the facts to be relayed, and is decided by the Chief Privacy and Legal Officer. The information provided to the Chief Executive Officer also includes the identity of any parties the Security Manager has identified who must be notified and, if any, a plan for how notice will be given. This is subject to the general requirement that notice to those parties should be given at the earliest reasonable opportunity.

The procedures stipulate that security breaches, including suspected breaches, be immediately contained by the Security Manager. The procedures specify the approach and objectives for containment. The containment measures must have regard to the systems and processes involved and what is required to prevent further harm. Containment must be as extensive, and last for as long, as reasonably required for this purpose, but no more. At a minimum, it must prevent further copying of affected, or other, information and, where containment involves destruction, ensure that this is carried out in a secure fashion and the date, time and method of destruction documented. The Security Manager is responsible for documenting decisions and containment activities in the Security Incident Report Form, and verifying compliance with the containment plans carried out by other agents.

The Security Manager is required to consider whether or not ICES has a duty to notify any third party, and if it has, prepare a written notification plan for review by the Chief Privacy and Legal Officer. The plan must take into account any particular arrangements relevant to notification contained in the data sharing agreement. It must also identify the appropriate ICES agent to deliver the notice and its format, the nature of any personal health information at issue, the measures that have been, and will be, implemented to contain the breach, including investigation and remediation. Where investigation determines that personal health information has been stolen, lost or accessed by unauthorized persons, the health information custodian that disclosed the information to ICES must be notified. Once the notification plan is approved, the Chief Privacy and Legal Officer is required to inform ICES' Chief Executive Officer within 30 days of detection and to ensure the plan is carried out and addresses all of the information identified in the plan.

Under the procedures, the Security Manager is required to commence an investigation once a breach has been contained. The objective is to gain a more precise understanding of the breach, including any personal health information involved, and identify the root cause(s) and measures to address them. The Security Manager is empowered to make whatever inquiries are reasonably required to achieve these objectives, which can include document review, interviews and physical inspections. All must be reflected in the Security Breach Report Form and supported by documentation, which must be saved to the incident file.

The Security Manager is responsible for communicating recommendations and working with agents to finalize action plans to address them. The Security Manager then reflects what has been agreed in a written plan, which is sent to the agent. This includes the names of those responsible as well as the timeline, which cannot exceed 45 days unless approved by the Chief Privacy and Legal Officer. It is the responsibility of the agents identified on the plan to assign others, as required, to carry it out; the Security Manager monitors to ensure compliance with the agreed timeline and reflects this in the Security Incidents Log.

Once all remedial action and notification are complete, the Security Manager ensures all supporting documentation is saved to the file, updates the Security Incident Report Form. Where the security breach also involved a privacy breach, the Security Manager sends a link to the Chief Privacy and Legal Officer to request approval to close the file. Once completed, the Form captures all the key facts associated with the security breach, including recommendations and their status. Once finalized, the Security Manager reflects this in the Security Incidents Log, which is maintained to track all security breaches and associated recommendations and timelines.

Compliance with the above policy and procedures is mandatory for all agents. Agents must notify ICES' Security Manager, or at an ICES Satellite the Local Privacy and Security Officer at the first reasonable opportunity if they breach, or believe there has been a breach of, the policies or procedures in accordance with ICES' Security Incident Management Policy. Violations including breach are subject to a range of disciplinary actions, including warning, temporary or permanent loss of access privileges, legal sanctions and termination of employment or contract with ICES. Disciplinary actions are enforced by ICES' Director, Human Resources, in consultation with the Chief Privacy and Legal Officer under ICES' Discipline and Corrective Action Policy. Compliance is subject to annual audit by the Security Manager and an audit schedule established under ICES' Internal Audit Policy.

18. Log of Information Security Breaches

| | | |
|---|--|--|
| APPLICATION | | |
| Fully applicable | <input checked="" type="checkbox"/> | Qualified application (<i>explain</i>) |
| EXISTENCE & IMPLEMENTATION | | |
| ICES vehicle(s) | Name | Status |
| | a. Security Incident Log & Report Forms Workbook | Implemented |
| DESCRIPTION | | |
| ICES has defined a log and report form, which together capture: | | |
| <ul style="list-style-type: none"> • Date of the information security breach; • Date the breach was identified or suspected; • Nature of the personal health information, if any, involved; • Nature and extent of the information security breach; • Containment date and measures; • Date of any notifications to the health information custodian or other organization; • Investigation complete date; • Investigator name; and • Resulting recommendations and action plans with responsible agents and date each recommendation was addressed. | | |

Part 3 – Human Resources Documentation

1. Policy & Procedures for Privacy Training & Awareness

| APPLICATION | | |
|--|--|-------------|
| Fully applicable <input checked="" type="checkbox"/> | Qualified application (<i>explain</i>) | |
| EXISTENCE & IMPLEMENTATION | | |
| ICES vehicle(s) | Name | Status |
| | a. Privacy Awareness & Training Policy | Implemented |
| | b. Privacy & Security Awareness Procedures | Implemented |
| | c. Privacy & Security Awareness Log | Implemented |
| | d. Privacy & Security Awareness Attendance Sheet | Implemented |
| | e. Privacy & Security Awareness Requirements Table | Implemented |
| | f. Privacy Consultation Log | Implemented |
| | g. Internal Audit Policy | Implemented |
| | h. Discipline & Corrective Action Policy | Implemented |
| | i. Privacy Incident Management Policy | Implemented |
| DESCRIPTION | | |
| <p>ICES' Privacy Awareness and Training Policy requires agents to comply with requirements established by the Chief Privacy and Legal Officer to create and sustain awareness of ICES' privacy policies, procedures and practices. At a minimum, these requirements include completion of initial privacy orientation prior to receiving access to personal health information, as well as participation in ongoing privacy awareness initiatives, including annual privacy training, which are devised by the Chief Privacy and Legal Officer to meet the objectives of the policy.</p> <p>Associated procedures assign responsibility to an ICES Privacy SME for delivering initial privacy orientation. Responsibility for notifying ICES' Privacy and Legal Administrator to schedule orientation depends on the role of the incoming agent and is set out in ICES' Privacy and Security Awareness Requirements Table, which is published and available for ongoing reference within ICES on the ICES intranet. Notification must be provided by email at the commencement of the agent's employment or contractual relationship with ICES.</p> <p>The content of the initial privacy orientation is prescribed. Under the policy, the initial orientation must address:</p> <ul style="list-style-type: none"> ICES' responsibilities arising from its designation under s. 45(3) of PHIPA; Types and sources of personal health information collected by ICES; Purposes for which ICES collects personal health information, and associated legal authorities and obligations; Limits on access to and use of personal health information at ICES; Responsibility and the procedure for handling privacy inquiries and complaints; Responsibility and the procedure for handling requests to disclose personal health information; An overview of ICES' key privacy policies, procedures and practices, as well as administrative, technical and physical safeguards to protect personal health information against theft, loss and unauthorized use, copying, modification or disposal, and agents' role and responsibilities in upholding them; An overview of ICES' Privacy Incident Management Policy and the duties and responsibilities of agents in identifying, reporting, containing and participating in the investigation and remediation of privacy incidents and breaches (Duties include a mandatory requirement to provide notification of privacy incidents at the first reasonable opportunity and to comply with any instructions to facilitate their containment, investigation and remediation.); Consequences of breach; A description of ICES' privacy program and its management; and An overview of the applicable ICES Confidentiality Agreement, its purpose and key provisions. <p>The procedures require that the ICES Privacy SME assigned to deliver privacy orientation verify attendance on the Privacy and Security Awareness Attendance Sheet, the required content of which is defined in the attendance sheet, and then forward the attendance sheet to the Privacy and Legal Administrator. Referring to the attendance sheet, the Privacy and Legal Administrator records attendance in the Privacy and Security Awareness Log, the ongoing maintenance of which is specifically required by the policy and procedure. The Privacy and Legal Administrator is responsible for filing the attendance sheet. Where the attendance sheet shows an agent failed to attend privacy</p> | | |

orientation, the Privacy and Legal Administrator must, on the same day, follow up with the agent to reschedule orientation.

Ongoing, annual privacy training is handled as follows: No later than the first business day of each fiscal year, ICES' CEO sends annual e-training notification emails alerting ICES agents to complete e-training. E-training is completed through a training module hosted on ICES' learning management system, and completion is tracked automatically in the system and monitored by ICES' Compliance Analyst. The CEO (or designate within the CEO's office) sends final email reminder messages, where applicable, seven days prior to the e-training completion deadline. Failure to complete e-training by the deadline results in suspension of access to ICES systems. Completion of e-training by a new specified deadline is then required to regain access. If e-training is not completed by the new specified deadline, and no arrangements have been made or approved to justify an extension, the CEO authorizes the ICES agent's supervisor to initiate off-boarding procedures.

The policy also stipulates that ICES' privacy awareness program include role-based information and training and mechanisms to sustain awareness and communicate significant changes. Significant changes include introduction of new privacy policies, procedures and practices and changes to them arising from the results of privacy impact assessments, privacy audits and monitoring, and privacy inquiries and complaints. The policy provides that mechanisms to sustain awareness will be delivered at least bimonthly, by the assigned Privacy SME, through means such as ICES staff meetings, ICES newsletters, policy and procedures update alerts on ICES' intranet, lunch and learns, privacy events and workshops, special speakers, and additional training which may include testing.

Compliance with the above policy and procedures is mandatory for all agents. Agents must notify an ICES Privacy SME at the first reasonable opportunity if they breach, or believe there has been a breach of, the policy or procedures, in accordance with ICES' Privacy Incident Management Policy. Violations including breach are subject to a range of disciplinary actions including warning, temporary or permanent loss of access privileges, legal sanctions and termination of employment or contract with ICES. Disciplinary actions are enforced by ICES' Director, Human Resources in consultation with ICES' Chief Privacy and Legal Officer under ICES' Discipline and Corrective Action Policy. Compliance is subject to annual audit by an ICES Privacy SME and an audit schedule established under ICES' Internal Audit Policy.

2. Log of Attendance at Initial Orientation and Ongoing Privacy Training

| | | |
|---|--|--|
| APPLICATION | | |
| Fully applicable | <input checked="" type="checkbox"/> | Qualified application (<i>explain</i>) |
| EXISTENCE & IMPLEMENTATION | | |
| ICES vehicle(s) | Name | Status |
| | a. Privacy & Security Awareness Log | Implemented |
| | b. Privacy & Security Awareness Procedures | Implemented |
| | c. Privacy & Security Learning Management System | Implemented |
| DESCRIPTION | | |
| ICES has developed and maintains a Privacy and Security Awareness Log to track attendance at initial privacy orientation. The log includes the individual's name and attendance date. Use of the log is required under ICES' Privacy and Security Awareness Procedures. | | |
| To this point, ongoing awareness activities have been carried out and have been tracked. Annual privacy training through ICES' Privacy & Security Learning Management System, which is mandatory for all agents and subject to annual renewal, includes tracking of the agent's name and the attendance dates of the annual training, in order to monitor and enforce compliance. | | |

3. Policy & Procedures for Security Training & Awareness

| | | |
|---------------------------------------|--|--|
| APPLICATION | | |
| Fully applicable | <input checked="" type="checkbox"/> | Qualified application (<i>explain</i>) |
| EXISTENCE & IMPLEMENTATION | | |
| ICES vehicle(s) | Name | Status |
| | a. Security Awareness & Training Policy | Implemented |
| | b. Privacy Awareness & Training Policy | Implemented |
| | c. Privacy & Security Awareness Requirements Table | Implemented |

| | | |
|--|---|-------------|
| | d. Privacy & Security Awareness Attendance Sheet | Implemented |
| | e. Privacy & Security Awareness Log | Implemented |
| | f. Discipline & Corrective Action Policy | Implemented |
| | g. Internal Audit Policy | Implemented |
| | h. Security Incident Management Policy | Implemented |

DESCRIPTION

ICES' Security Awareness and Training Policy requires agents to comply with requirements established by ICES' Security Manager to create and sustain awareness of ICES' security policies, procedures and practices. At a minimum, these requirements must include completion of initial security orientation prior to receiving access to personal health information as well as participation in ongoing security awareness initiatives, including annual security training, which are devised by the Security Manager, to meet the objectives of the policy.

Associated procedures assign responsibility to an ICES Privacy SME for delivering initial security orientation. Responsibility for notifying ICES' Privacy and Legal Administrator to schedule orientation depends on the role of the incoming agent and is set out in ICES' Privacy and Security Awareness Requirements Table, which is published and available for ongoing reference within ICES on the ICES intranet. Notification must be provided by email at the commencement of the agent's employment or contractual relationship with ICES. The policy specifies the standard information to be included in initial security orientation:

- An overview of ICES' key security policies, procedures and practices, and agents' roles and responsibilities in upholding them;
- Consequences of breach of the security policies, procedures and practices;
- A description of ICES' security program, including key activities of the program and the agents that have been delegated day-to-day authority to manage the security program;
- ICES' administrative, technical and physical safeguards for protecting information against theft, loss and unauthorized use, disclosure, copying modification or disposal;
- The duties and responsibilities of agents in upholding the administrative, technical and physical safeguards; and
- An explanation of ICES' policy and procedures for managing security breaches, and agents' duties and responsibilities in identifying, reporting, containing and participating in the investigation and remediation of information security breaches. Duties include a mandatory requirement to provide notification of actual or suspected security breaches at the first reasonable opportunity and to comply with any instructions to facilitate their containment, investigation and remediation.

The procedures require that the ICES SME Officer assigned to deliver security orientation verify attendance on the Privacy and Security Awareness Attendance Sheet, the required content of which is defined in the attendance sheet, and then forward the attendance sheet to the Privacy and Legal Administrator. Referring to the attendance sheet, the Privacy and Legal Administrator records attendance in the Privacy and Security Awareness Log, the ongoing maintenance of which is specifically required by the policy and procedures. The Privacy and Legal Administrator is responsible for filing the attendance sheet. Where the attendance sheet shows an agent failed to attend security orientation, the Privacy and Legal Administrator must, on the same day, follow up with the agent to reschedule orientation.

Ongoing, annual security training is handled as follows: No later than the first business day of each fiscal year, ICES' CEO sends annual e-training notification emails alerting ICES agents to complete e-training. E-training is completed through a training module hosted on ICES' learning management system, and completion is tracked automatically in the system and monitored by ICES' Compliance Analyst. The CEO (or designate within the CEO's office) sends final email reminder messages, where applicable, seven days prior to the e-training completion deadline. Failure to complete e-training by the deadline results in suspension of access to ICES systems. Completion of e-training by a new specified deadline is then required to regain access. If e-training is not completed by the new specified deadline, and no arrangements have been made or approved to justify an extension, the CEO authorizes the ICES agent's supervisor to initiate off-boarding procedures.

The policy stipulates that ICES' security awareness program include role-based information and training to ensure agents understand how to apply security policies, procedures and practices relevant to their roles. The policy also requires mechanisms to sustain awareness about and communicate significant changes to ICES' security program, including new security policies, procedures and practices and changes to them arising from the results of privacy impact assessments, security breaches and security audits including threat risk assessments, security

reviews or assessments, vulnerability assessments, penetration testing, ethical hacks and reviews of system control and audit logs. The policy provides that mechanisms to sustain awareness will be delivered at least bimonthly, by the assigned Security SME, through means such as ICES newsletters, policy and procedure update alerts on ICES' intranet, lunch and learns, events, online video training, and testing and simulation exercises (i.e. phishing and malware simulations exercises).

Compliance with the above policy and procedures is mandatory for all agents. Agents must notify an ICES Security SME at the first reasonable opportunity if they breach, or believe there has been a breach of, the policy or procedures, in accordance with ICES' Security Incident Management Policy. Violations including breach are subject to a range of disciplinary actions, including warning, temporary or permanent loss of access privileges, legal sanctions and termination of employment or contract with ICES. Disciplinary actions are enforced by ICES' Director, Human Resources in consultation with the Chief Privacy and Legal Officer under ICES' Discipline and Corrective Action Policy. Compliance is subject to annual audit by the Security Manager and an audit schedule established under ICES' Internal Audit Policy.

4. Log of Attendance at Initial Security Orientation & Ongoing Security Training

| | | |
|--|--|---------------|
| APPLICATION | | |
| Fully applicable <input checked="" type="checkbox"/> | Qualified application (<i>explain</i>) | |
| EXISTENCE & IMPLEMENTATION | | |
| ICES vehicle(s) | Name | Status |
| | a. Privacy & Security Awareness Log | Implemented |
| | b. Privacy & Security Awareness Procedures | Implemented |
| | c. Privacy & Security Learning Management System | Implemented |
| DESCRIPTION | | |
| ICES has developed and maintains a Privacy and Security Awareness Log to track attendance at initial security orientation. The log includes the individual's name and attendance date. Use of the log is required under ICES' Privacy and Security Awareness Procedures. | | |
| To this point, ongoing awareness activities have been carried out and have been tracked. Annual security training through ICES' Privacy & Security Learning Management System, which is mandatory for all agents and subject to annual renewal, includes tracking of the agent's name and the attendance dates of the annual training, in order to monitor and enforce compliance. | | |

5. Policy & Procedures for the Execution of Confidentiality Agreements by Agents

| | | |
|--|--|---------------|
| APPLICATION | | |
| Fully applicable <input checked="" type="checkbox"/> | Qualified application (<i>explain</i>) | |
| EXISTENCE & IMPLEMENTATION | | |
| ICES vehicle(s) | Name | Status |
| | a. Privacy Awareness & Training Policy | Implemented |
| | b. Privacy & Security Awareness Procedures | Implemented |
| | c. Privacy & Security Awareness Log | Implemented |
| | d. Privacy & Security Awareness Requirements Table | Implemented |
| | e. Privacy & Security Awareness Attendance Sheet | Implemented |
| | f. Internal Audit Policy | Implemented |
| | g. Discipline & Corrective Action Policy | Implemented |
| DESCRIPTION | | |
| ICES' Privacy Awareness and Training Policy requires agents to sign a confidentiality agreement prior to being given access to data, including personal health information, and annually thereafter. Associated procedures and responsibilities are defined to support the execution of agreements. Under the procedures, a designated ICES agent must notify the Privacy and Legal Administrator to schedule privacy orientation and ensure an agreement is signed. Responsibility for providing notification depends on the role of the incoming agent and is set out in ICES' Privacy and Security Awareness Requirements Table, which is published and available for ongoing reference within ICES on the ICES intranet. Notification, whether provided by ICES' Science Office, a principal investigator or other | | |

delegated person, or through ICES' onboarding system, must be provided by email at the commencement of the agent's employment or contractual relationship with ICES. Under the procedures, the ICES Privacy SME assigned to deliver initial privacy orientation must, at the time, obtain a signed agreement. The ICES Privacy SME must provide the signed agreement to the Privacy and Legal Administrator, who is responsible for filing the agreement and tracking it in the Privacy and Security Awareness Log. Where an agent fails to attend orientation and sign an agreement, the Privacy and Legal Administrator must, on the same day, contact the agent to reschedule orientation. An ICES Privacy SME is required to obtain a signed agreement at the time of delivering orientation.

The procedures set out the specified time each year when ICES' Chief Executive Officer must send out confidentiality agreement renewal notifications and the process to be followed where an agent fails to renew his/her agreement by the specified deadline.

Compliance with the above policy and procedures is mandatory for all agents. Agents must notify an ICES Privacy SME at the first reasonable opportunity if they breach, or believe there has been a breach of, the policy or procedures, in accordance with ICES' Privacy Incident Management Policy. Violations including breach are subject to a range of disciplinary actions including warning, temporary or permanent loss of access privileges, legal sanctions and termination of employment or contract with ICES. Disciplinary actions are enforced by ICES' Director, Human Resources in consultation with ICES' Chief Privacy and Legal Officer under ICES' Discipline and Corrective Action Policy. Compliance is subject to annual audit by an ICES Privacy SME and an audit schedule established under ICES' Internal Audit Policy.

6. Template Confidentiality Agreement with Agents

| | | |
|---|---|---------------|
| APPLICATION | | |
| Fully applicable <input checked="" type="checkbox"/> | Qualified application (<i>explain</i>) | |
| EXISTENCE & IMPLEMENTATION | | |
| ICES vehicle(s) | Name | Status |
| | a. ICES Confidentiality Agreement (General) | Implemented |
| | b. ICES Confidentiality Agreement (Data Covenantor) | Implemented |
| | c. ICES Confidentiality Agreement (Abstractor) | Implemented |
| | d. ICES Collaborating Researcher NDA | Implemented |
| DESCRIPTION | | |
| ICES has defined a suite of template confidentiality agreements, which are required for all agents under ICES' Privacy Awareness Policy. | | |
| <u>General Provisions</u> | | |
| The templates describe ICES' status as a prescribed entity under PHIPA and its duties and responsibilities arising from that status. The templates state that the individuals executing the agreements are agents of ICES and outline the responsibilities that arise from this. These specifically include agents' duty to comply with PHIPA and its regulation in relation to ICES and the terms of the confidentiality agreement and any amendments to it. Agents are also required to agree to read and comply with the privacy and security policies, procedures and practices ICES has implemented as a prescribed entity and any amendments to them. They include a definition of personal health information that is consistent with PHIPA and its regulation. | | |
| <u>Obligations with Respect to Collection, Use and Disclosure of Personal Health Information</u> | | |
| The templates identify the purposes for which agents are permitted to collect, use and disclose personal health information on behalf of ICES and any associated conditions, limitations and restrictions. For example, ICES Abstractors are required to use any ICES equipment issued to them and abide by ICES instructions when they collect personal health information. ICES Data Covenantors, who collect and destroy personal health information, must do so in accordance with data sharing agreements. All versions prohibit agents from using personal health information except in accordance with the agreement or as required by law, more personal health information than is reasonably required to, or any personal information if other information will, serve the purpose. (Disclosure is permitted only in the template for ICES Data Covenantors). | | |
| <u>Termination of the Contractual or Employment Relationship</u> | | |
| The templates stipulate that agents must return all property of ICES, including records of personal health information, and all identification cards, access cards and/or keys, by the end of the last day of their relationship with ICES. In all cases, in accordance with ICES' Termination of Employment/Resignation and Discharge Policy, the templates stipulate that these be personally delivered to the agent's ICES supervisor. | | |

Notification

In accordance with ICES' Privacy Incident Management Policy and ICES' Security Incident Management Policy, the templates require agents to notify ICES immediately of any breach or suspected breach of the agreement or ICES' privacy and security policies, procedures and practices, by the agent or any other party.

Consequences of Breach and Monitoring Compliance

The templates explicitly provide that failure to comply is grounds for discipline and may lead to termination of the agent's relationship with ICES. All reserve a right of audit by ICES, which agents must formally acknowledge. They acknowledge that ICES may request and inspect equipment used by them, logs and documents of any kind generated as result of their activities, and make such other inquiries as are reasonably required to confirm the agent's compliance with the agreement.

7. Log of Executed Confidentiality Agreements with Agents

| | | |
|--|--|---------------|
| APPLICATION | | |
| Fully applicable <input checked="" type="checkbox"/> | Qualified application (<i>explain</i>) | |
| EXISTENCE & IMPLEMENTATION | | |
| ICES vehicle(s) | Name | Status |
| | a. Privacy & Security Awareness Log | Implemented |
| | b. Confidentiality Agreement/Conflict of Interest Renewal Database | Implemented |
| | c. ICES Abstractors Log | Implemented |
| DESCRIPTION | | |
| <p>ICES has defined the Privacy and Security Awareness Log to track the execution of initial confidentiality agreements. Under ICES' Privacy and Security Awareness Procedures, maintenance of the log is required and is the responsibility of the Privacy and Legal Administrator. Information captured in the log includes:</p> <ul style="list-style-type: none"> • Agent name; • Date of employment or contractual relationship commencing; and • Date initial agreement was signed. <p>The Manager, Executive Office & Research Administration is responsible for tracking annual renewal dates in the Confidentiality Agreement/Conflict of Interest Renewal Database. This log includes:</p> <ul style="list-style-type: none"> • Agent name; and • Date agreement was signed. <p>With respect to ICES Abstractors, the applicable Research Project Manager is responsible for obtaining and tracking initial agreements and renewals. This log includes:</p> <ul style="list-style-type: none"> • Agent name; • Date of employment or contractual relationship commencing; and • Date initial agreement was signed. | | |

8. Job Description for the Position(s) Delegated Day-to-Day Authority to Manage the Privacy Program

| | | |
|--|--|---------------|
| APPLICATION | | |
| Fully applicable <input checked="" type="checkbox"/> | Qualified application (<i>explain</i>) | |
| EXISTENCE & IMPLEMENTATION | | |
| ICES vehicle(s) | Name | Status |
| | a. Detailed Position Description – Chief Privacy and Legal Officer | Implemented |
| | b. Internal Audit Policy | Implemented |
| | c. Privacy Impact Assessment Policy | Implemented |
| DESCRIPTION | | |

ICES has developed a job description for the position of Chief Privacy and Legal Officer. The job description gives the Chief Privacy and Legal Officer authority to manage ICES' privacy program, reporting directly to ICES' Chief Executive Officer. The job description sets out the more detailed responsibilities and obligations of the Chief Privacy and Legal Officer, which include:

- Developing, implementing, reviewing and amending privacy policies, procedures and practices;
- Ensuring compliance with the privacy policies, procedures and practices implemented;
- Ensuring transparency of the privacy policies, procedures and practices implemented;
- Facilitating compliance with PHIPA and its regulation;
- Ensuring employees and agents are aware of PHIPA and its regulation and their duties under it;
- Ensuring employees and agents are aware of, and appropriately informed of their duties under, the privacy policies, procedures and practices implemented by ICES in support of its designation as a prescribed entity;
- Directing, delivering and ensuring the delivery of the initial privacy orientation and ongoing privacy training, and fostering a culture of privacy;
- Conducting, reviewing and approving privacy impact assessments;
- Receiving, documenting, tracking and investigating, remediating and responding to privacy complaints in accordance with IPC requirements;
- Receiving and responding to privacy inquiries in accordance with IPC requirements;
- Receiving, documenting, tracking, investigating and remediating privacy breaches and suspected privacy breaches in accordance with IPC requirements; and
- Conducting privacy audits in accordance with IPC requirements.

9. Job Description for the Position(s) Delegated Day-to-Day Authority to Manage the Security Program

| | | |
|--|---|--|
| APPLICATION | | |
| Fully applicable | <input checked="" type="checkbox"/> | Qualified application (<i>explain</i>) |
| EXISTENCE & IMPLEMENTATION | | |
| ICES vehicle(s) | Name | Status |
| | a. ICES Position Description – Security Manager | Implemented |
| DESCRIPTION | | |
| <p>ICES has developed a job description for the position delegated day-to-day authority to manage the security program. The Security Manager reports to ICES' Chief Privacy and Legal Officer, who, in turn, reports to the Chief Executive Officer. The job description sets out the more detailed responsibilities and obligations of the Security Manager, which include:</p> <ul style="list-style-type: none"> • Developing, implementing, reviewing and amending security policies, procedures and practices; • Ensuring compliance with the security policies, procedures and practices implemented; • Ensuring agents are aware of the security policies, procedures and practices implemented, and are appropriately informed of their duties and obligations thereunder; • Directing, delivering or ensuring the delivery of the initial security orientation and the ongoing security training and fostering a culture of information security awareness; • Receiving, documenting, tracking, investigating and remediating information security breaches or suspected information security breaches pursuant to the ICES Security Incident Management Policy; and • Conducting security audits pursuant to ICES' Internal Audit Policy and Security Audit Procedure. | | |

10. Policy & Procedures for Termination or Cessation of the Employment or Contractual Relationship

| | | |
|---------------------------------------|--|--|
| APPLICATION | | |
| Fully applicable | <input checked="" type="checkbox"/> | Qualified application (<i>explain</i>) |
| EXISTENCE & IMPLEMENTATION | | |
| ICES vehicle(s) | Name | Status |
| | a. Termination of Employment Policy | Implemented |
| | b. Security Incident Management Policy | Implemented |
| | c. Privacy Incident Management Policy | Implemented |
| | d. Discipline & Corrective Action Policy | Implemented |

| DESCRIPTION |
|---|
| <p>ICES' Termination of Employment Policy requires agents to provide written notice of resignation to their manager before a specified time and their managers to, in turn, notify a Human Resources Associate.</p> <p>The policy requires agents to securely return in person all ICES property on their termination date. ICES property is defined to include, but is not limited to, identification cards, access cards, and/or keys and copies of data including personal health information. ICES' Manager, Facilities & Administration must obtain from the agent any property consisting of identification cards, access cards, and/or keys, and must maintain a record of items returned. The assigned IT staff are responsible for obtaining from the agent any property consisting of mobile media or devices, which may contain copies of personal health information, and to maintain a record of items returned. The agent's manager is required to obtain other ICES property, including copies of personal health information associated with ICES projects. If any property is not returned on the termination date, the policy requires a Human Resources Associate to take steps immediately to engage the agent and obtain the property.</p> <p>Under the policy, within one week of the agent's termination date, the assigned Human Resources Associate must provide written notification of the agent's termination to ICES' Manager, Facilities & Administration and IT Department. On the termination date, the Manager, Facilities & Administration must terminate physical access to ICES and the designated IT staff must remove access to ICES-controlled information systems.</p> <p>Compliance with the above policy is mandatory for all agents. Agents must notify an ICES Security SME and/or an ICES Privacy SME at the first reasonable opportunity if they breach, or believe there has been a breach of, the policy or procedures, in accordance with ICES' Security Incident Management Policy and/or ICES' Privacy Incident Management Policy. Violations including breach are subject to a range of disciplinary actions, including warning, temporary or permanent loss of access privileges, legal sanctions and termination of employment or contract with ICES. Disciplinary actions are enforced by ICES' Director, Human Resources in consultation with the Senior Director, Information Technology, Finance and Corporate Projects, Senior Director, Research and Data or Chief Privacy and Legal Officer, as applicable, under ICES' Discipline and Corrective Action Policy. Compliance is subject to audit by ICES' Director, Human Resources or the assigned Human Resources Associate under ICES' Termination of Employment Policy.</p> |

11. Policy & Procedures for Discipline & Corrective Action

| APPLICATION | | |
|--|--|--|
| Fully applicable | <input checked="" type="checkbox"/> | Qualified application (<i>explain</i>) |
| EXISTENCE & IMPLEMENTATION | | |
| ICES vehicle(s) | Name | Status |
| | a. Discipline & Corrective Action Policy | Implemented |
| DESCRIPTION | | |
| <p>ICES' Discipline and Corrective Action Policy addresses discipline and corrective action with respect to agent misconduct involving personal health information. In cases of misconduct involving personal health information, the policy assigns responsibility to the agent's manager, the Director, Human Resources and the Chief Privacy and Legal Officer for conducting investigations. The policy identifies the documentation that must be completed by the Director, Human Resources or the assigned Human Resources Associate, and its contents. Results of the investigation must be provided to the agent who has committed the misconduct, where applicable.</p> <p>The types of discipline and corrective action that may be imposed and the factors that must be considered in determining the appropriate discipline and corrective action are set out in the policy. Under the policy, the Director, Human Resources, in consultation with the Chief Privacy and Legal Officer, must determine the appropriate type of discipline or corrective action to be imposed, up to and including termination. The policy requires the assigned Human Resources Associate to retain documentation related to the misconduct and the discipline imposed or corrective action taken in the agent's human resources file.</p> | | |

Part 4 – Organizational & Other Documentation

1. Privacy Governance & Accountability Framework

| | | |
|---|--|---------------|
| APPLICATION | | |
| Fully applicable <input checked="" type="checkbox"/> | Qualified application (<i>explain</i>) | |
| EXISTENCE & IMPLEMENTATION | | |
| ICES vehicle(s) | Name | Status |
| | a. Privacy Policy | Implemented |
| DESCRIPTION | | |
| <p>ICES' Privacy Policy includes the following provisions to enable compliance with PHIPA and its regulation and compliance with ICES' privacy policies, procedures and practices addressed in this report. These include:</p> <ul style="list-style-type: none"> • Ultimate accountability of ICES' Chief Executive Officer; • Identification of the Chief Privacy and Legal Officer as the position with day-to-day responsibility for privacy, who reports to and is overseen by the Chief Executive Officer; • Identification of the role of, and requirement to appoint, privacy SMEs at ICES' main location and each ICES expansion site, who manage privacy under the oversight of ICES' Chief Privacy and Legal Officer; • The oversight role of the Finance, Audit and Risk Committee of ICES' Board of Directors in relation to the privacy program; and • The requirement that ICES' Chief Executive Officer report privacy breaches and privacy complaints to the Finance, Audit and Risk Committee, and submit to that committee each year a written update that addresses initiatives undertaken by the privacy program, including privacy training, the development and implementation of privacy policies, procedures and practices, and privacy audits and privacy impact assessments and resulting recommendations and their status. <p>This policy stipulates that the policy, including the description of ICES' privacy governance and accountability framework it contains, must be published on the ICES intranet and addressed in privacy training, which is mandatory for all agents of ICES.</p> | | |

2. Security Governance & Accountability Framework

| | | |
|---|---|---------------|
| APPLICATION | | |
| Fully applicable <input checked="" type="checkbox"/> | Qualified application (<i>explain</i>) | |
| EXISTENCE & IMPLEMENTATION | | |
| ICES vehicle(s) | Name | Status |
| | a. Security Framework & Governance Policy | Implemented |
| DESCRIPTION | | |
| <p>ICES' Security Framework and Governance Policy ensures compliance with ICES' security policies, procedures and practices and with PHIPA and its regulation. Under the policy, ICES' Chief Executive Officer has ultimate accountability for ensuring personal health information is protected and agents comply with ICES' security policies, procedures and practices. The policy identifies the positions at ICES with day-to-day authority to manage the information security and physical security programs, and their associated responsibilities and reporting relationships with ICES' Chief Executive Officer. Other ICES agents who support the security program are also identified in the policy.</p> <p>The policy designates the Finance, Audit and Risk Committee of ICES' Board of Directors to oversee security at ICES. Designated security SMEs are required to provide annual updates through a written report to this committee. The report is required to contain information about initiatives undertaken by the security program, including training and policy development, as well as security audits and any security breaches investigated, including the results and any recommendations arising from the audits or breach investigations and the implementation status of the recommendations. The method by which the policy must be communicated to agents, and responsibility for communication, are stipulated in the policy.</p> | | |

3. Terms of Reference for Committees with Roles with Respect to the Privacy Program &/or Security Program

| | |
|--|--|
| APPLICATION | |
| Not applicable <input checked="" type="checkbox"/> | Qualified application (<i>explain</i>) |

| EXISTENCE & IMPLEMENTATION | | |
|---|---|---------------|
| ICES vehicle(s) | Name | Status |
| | a. Finance, Audit & Risk Committee Terms of Reference | Implemented |
| DESCRIPTION | | |
| <p>ICES' privacy and security programs are overseen by a committee of ICES' Board of Directors. Terms of reference for ICES' Finance, Audit and Risk Committee identify the mandate and responsibility of that committee in respect of ICES' privacy and security programs. They require that:</p> <ul style="list-style-type: none"> • The committee be comprised of at least three individuals, all of whom are members of the ICES' Board of Directors; • The ICES' Board of Directors appoint one of the committee members as chair of the committee; and • The committee review annual written reports prepared by ICES' Chief Privacy and Legal Officer, as well as reports of any privacy and security audits and breaches and the sufficiency of associated remedial action. <p>In addition, the terms of reference require that all meetings of the committee be minuted, and once approved by it, circulated to ICES' Board of Directors. The committee is required to convene at least three times each year. No additional reports are required.</p> | | |

4. Corporate Risk Management Framework

| APPLICATION | | |
|--|--|---------------|
| Fully applicable <input checked="" type="checkbox"/> | Qualified application (<i>explain</i>) | |
| EXISTENCE & IMPLEMENTATION | | |
| ICES vehicle(s) | Name | Status |
| | a. Risk Management Policy | Implemented |
| | b. ICES Risk Management Framework & Procedure | Implemented |
| | c. ICES Corporate Risk Register | Implemented |
| Comments | As of September 2020 ICES is in the process of revising its enterprise risk management framework and supporting policy, procedure and register, with assistance from a risk management consultant, to incorporate risk-management best practices. The revised framework is being piloted, and implementation will occur over the next several months, and will involve training and integration across ICES departments. The revised framework will continue to comply with the IPC Manual requirements. | |
| DESCRIPTION | | |
| <p>ICES has defined a comprehensive and integrated enterprise risk management framework to identify, assess, mitigate and monitor risks, including risks that may negatively affect its ability to protect the privacy of individuals whose personal health information is received and to maintain the confidentiality of that information.</p> <p>Under ICES' Risk Management Framework and Procedure, the Chief Privacy and Legal Officer is responsible for the identification and mitigation of risks that may negatively affect ICES' ability to protect the privacy of individuals whose personal health information is received and to maintain the confidentiality of that information. The Chief Privacy and Legal Officer may involve others, as relevant, including, for example, ICES' Operations Team, in the identification and documentation of risks. A Risk Documentation Form has been defined and is set out in an appendix to the Risk Management Framework and Procedure. The Chief Privacy and Legal Officer is required to use this form to document risks (or where a risk has been identified by another person, assist them in doing so), and file a copy of the completed form with ICES' Senior Director, Information Technology, Finance and Corporate Projects.</p> <p>The Risk Documentation Form guides and documents the ranking and assessment of the likelihood and potential impact of a risk in accordance with criteria that are defined in ICES' Risk Management Framework and Procedure.</p> <p>ICES' Risk Management Framework and Procedure makes the Chief Privacy and Legal Officer responsible for ensuring any actual or potential risks to privacy are mitigated, and sets out the process to be followed and the criteria that must be considered in doing so. The Chief Privacy and Legal Officer's responsibilities specifically include assigning agents to implement mitigation strategies, establishing timelines, and monitoring to ensure that mitigation strategies have been implemented. All must be recorded on the Risk Documentation Form.</p> | | |

ICES' Risk Management Framework and Procedure requires the Senior Director, Information Technology, Finance and Corporate Projects to maintain a risk register to document the results of ICES' risk management process, including risks that may negatively affect ICES' ability to protect privacy and the confidentiality of personal health information. ICES' Corporate Risk Register, which is maintained by the Senior Director, Information Technology, Finance and Corporate Projects, captures the risks identified and their assessment, as well as the strategies to mitigate them and their status. The Senior Director, Information Technology, Finance and Corporate Projects is required to present the register to ICES' Executive and management committees, as well as to the Finance, Audit and Risk Committee of ICES' Board of Directors, on a quarterly basis. The Finance, Audit and Risk Committee, which has ultimate responsibility for risk management, must approve the register and make a report to the Board of Directors.

The Risk Management Framework and Procedure also calls for the ongoing review of ICES Corporate Risk Register. The Senior Director, Information Technology, Finance and Corporate Projects and Chief Privacy and Legal Officer are jointly responsible for ensuring new risks are added to the register when they are identified, and for continuously monitoring to ensure deadlines are managed.

Finally, the Risk Management Framework and Procedure is explicitly integrated into ICES' policies, procedures and practices, and into projects undertaken by or on behalf of ICES, as prescribed entity. It does this as follows: the Chief Privacy and Legal Officer is responsible for ensuring that all risks identified in ICES' Consolidated List of Recommendations, ICES' privacy and security breach policies, procedures and practices, and through the privacy impact assessments that must be conducted on any project, are subject to the risk management policy and procedures described in this section.

5. Corporate Risk Register

| | | |
|---|-------------------------------------|--|
| APPLICATION | | |
| Fully applicable | <input checked="" type="checkbox"/> | Qualified application (<i>explain</i>) |
| EXISTENCE & IMPLEMENTATION | | |
| ICES vehicle(s) | Name | Status |
| | a. ICES Corporate Risk Register | Implemented |
| DESCRIPTION | | |
| ICES has a corporate risk register that identifies risks that may negatively affect ICES' ability to protect the privacy of individuals whose personal health information it collects and to maintain the confidentiality of that information. For each risk identified, the register provides an assessment of the risk, a ranking of the risk, a mitigation strategy to reduce the likelihood of the risk occurring and/or to reduce the impact of the risk if it does occur, the date the mitigation strategy was or is required to be implemented, and the agent responsible for implementation of the mitigation strategy. | | |

6. Policy & Procedures for Maintaining a Consolidated Log of Recommendations

| | | |
|--|--|--|
| APPLICATION | | |
| Fully applicable | <input checked="" type="checkbox"/> | Qualified application (<i>explain</i>) |
| EXISTENCE & IMPLEMENTATION | | |
| ICES vehicle(s) | Name | Status |
| | a. Internal Audit Policy | Implemented |
| | b. Consolidated Log of Recommendations | Implemented |
| DESCRIPTION | | |
| ICES maintains a consolidated log of recommendations arising from privacy impact assessments, privacy audits, security audits, the investigation of privacy breaches and complaints, the investigation of security breaches, and recommendations arising from reviews of the Information and Privacy Commissioner of Ontario. The log is maintained by a Privacy SME and the Security Manager under the direction of ICES' Chief Privacy and Legal Officer. The log is updated and reviewed at bi-weekly meetings of the Privacy and Legal team and reviewed monthly with ICES' President and Chief Executive Officer. | | |
| Compliance with the policy is mandatory. Agents must notify an ICES Privacy SME at the first reasonable opportunity if they breach, or believe there has been a breach of, the policies, in accordance with ICES' Privacy Incident Management Policy. Violations including breach are subject to a range of disciplinary actions, including warning, temporary or permanent loss of access privileges, legal sanctions and termination of employment or contract with ICES. Disciplinary actions are enforced by ICES' Directory, Human Resources in consultation with ICES' Chief | | |

Privacy and Legal Officer under ICES' Discipline and Corrective Action Policy. Compliance is subject to annual audit by an ICES Privacy SME and an audit schedule established under ICES' Internal Audit Policy.

7. Consolidated Log of Recommendations

| | | |
|--|--|---------------|
| APPLICATION | | |
| Fully applicable <input checked="" type="checkbox"/> | Qualified application (<i>explain</i>) | |
| EXISTENCE & IMPLEMENTATION | | |
| ICES vehicle(s) | Name | Status |
| | a. Consolidated Log of Recommendations | Implemented |
| DESCRIPTION | | |
| <p>ICES maintains a consolidated log of recommendations. The log captures recommendations arising from privacy impact assessments, privacy audits, security audits, the investigation of privacy breaches and complaints, the investigation of security breaches, and recommendations arising from reviews of the Information and Privacy Commissioner of Ontario. The log identifies the name and file number for each item on the log, the date of the document from which the recommendation arose, the recommendation, the manner for addressing the recommendation, the date on which recommendations were addressed and the responsible agent.</p> | | |

8. Business Continuity & Disaster Recovery Plan

| | | |
|---|--|---------------|
| APPLICATION | | |
| Fully applicable <input checked="" type="checkbox"/> | Qualified application (<i>explain</i>) | |
| EXISTENCE & IMPLEMENTATION | | |
| ICES vehicle(s) | Name | Status |
| | a. Information Technology Business Continuity and Disaster Recovery Plan | Implemented |
| DESCRIPTION | | |
| <p>ICES' Information Technology Business Continuity and Disaster Recovery Plan has been defined and implemented to protect and ensure the continued availability of ICES' technology environment in the event of short and long-term business interruptions, and in the event of threats to its operating capabilities, including natural, human, environmental and technical interruptions and threats.</p> <p>The Plan requires employees and agents who detect an interruption or threat to report it to ICES' IT Helpdesk, and stipulates the information that must be provided. The report should be made as soon as possible and in any event within one hour of detection. The IT Helpdesk employee who receives the report is required to document it in the Helpdesk ticketing system, and assign the appropriate priority classification under ICES' Helpdesk Service Standard. Any threat assessed as having the potential to cause a business interruption of more than 24 hours trigger notice to the IT Manager and Director, who activate the Plan.</p> <p>Once activated, the Plan calls for assembly of a Threat Assessment Team, who must complete an initial assessment of the severity of the interruption or threat within 24 hours. The composition of the team is set out in the Plan, as are the assessment criteria and process. Where severity is assessed as medium or high, the team is required to consult. The Plan identifies by role the agents who must be consulted in all cases, which include ICES' Executive Committee, and provides a framework for determining any additional roles who must be notified, based on the nature of the threat. It also provides, and assigns responsibility, for the development and maintenance of contact lists that collectively enable notification of all agents, service providers, stakeholders and other persons and organizations, as required.</p> <p>The Threat Assessment Team is then responsible for conducting a detailed assessment to evaluate the extent of the damage and recovery effort. The Plan sets out the manner in which the assessment is required to be conducted, the agents who must be consulted, and the criteria that must be considered.</p> <p>The Plan then calls for assembly of a Service Recovery Team, who are responsible for resumption and recovery. The composition of the team is set out in the Plan, as are the recovery process, criteria for prioritizing the recovery, and recovery time objectives.</p> <p>Throughout, the Plan addresses documentation, communication and reporting and associated roles and responsibilities. The Threat Assessment Team and Service Recovery Team are required to document all decisions and actions in the Helpdesk ticketing system, which is also used for communication. The IT Manager is required to provide a report to ICES' Executive, the content of which is stipulated in the Plan.</p> | | |

The IT Manager is responsible for developing and maintaining an inventory of all critical applications and business functions and of all hardware and software, software licences, recovery media, equipment, system network diagrams, hardware configuration settings, configuration settings for database systems and network settings for firewalls, routers, domain name servers and email servers. The IT Manager is also required to determine criticality of all of the above in consultation with ICES' Executive, against criteria that are set out in the Plan.

Testing and maintenance of the Plan is also addressed. The IT Director is responsible for ensuring the Plan is annually tested, maintained and assessed for effectiveness, and amended as warranted with the approval of the Senior Director, Information Technology, Finance and Corporate Projects. The procedures for these activities are all set out in the Plan.

The IT Director is responsible for communicating the Plan and any amendments to it. This specifically includes responsibility for directly communicating the Plan to ICES' Executives by email, members of the Threat Assessment Team and Service Recovery Team, and other agents identified in the Plan. In addition, the IT Director is required to ensure a copy of the Plan is posted to the ICES intranet.

C. Privacy, Security & Other Indicators

Part 1 – Privacy Indicators

General Privacy Policies, Procedures & Practices

| Privacy Indicator | Assessment |
|--|--|
| Dates privacy policies and procedures were reviewed since prior IPC review | See Appendix A (p. 91-99) for details. |
| Whether amendments were made to existing privacy policies and procedures as a result of the review, and a list and description of each | |
| Whether new privacy policies and procedures were developed and implemented as a result of the review, and description of each | |
| Date each amended and newly developed privacy policy and procedure was communicated, and nature of communication | |
| Whether communication materials available to public and other stakeholders were amended as a result of the review, and description of amendments | |

Collection

| Privacy Indicator | Assessment |
|---|--|
| Number of data holdings that contain personal health information | Total data holdings: 96. This number includes data holdings that contain personally identifiable information including but not limited to personal health information. |
| Number of statements of purpose for data holdings that contain personal health information | Total statements of purpose: 96. This number includes statements of purpose for data holdings that contain personally identifiable information including but not limited to personal health information. |
| Number and list of statements of purpose reviewed since the last IPC review | Total statements of purpose reviewed: 96 See Appendix B (p. 100-128) for a list of statements of purpose reviewed since the last IPC review. |
| Whether amendments were made to existing statements of purpose as a result of the review, and a list of those statements of purpose with a description of amendments made | The statements of purpose associated with the data holdings listed below were amended to permit use and disclosure for research by third party researchers: Cardiac & Vascular Registry Data Home Care Database Resident Assessment Instrument - Contact Assessment Resident Assessment Instrument - Home Care |

Use

| Privacy Indicator | Assessment |
|---|--|
| Number of agents granted approval to access and use personal health information for non-research purposes | Total agents granted approval: 51. This includes access and use by ICES Abstractors and ICES Data Covenantors, who are the only agents at ICES authorized to access and use personal health information with direct personal identifiers. Otherwise ICES agents are permitted access to and use of coded information only. |
| Number of requests received for use of personal health information for research since prior IPC | ICES has no record of requests received for use of personal health information for research. |
| Number of requests for use of personal health information for research purposes that were granted and that were denied since prior IPC review | ICES has no record of requests granted or declined. |

Disclosure

| Privacy Indicator | Assessment |
|---|--|
| Number of requests for disclosure of personal health information for non-research purposes since prior IPC review | Total requests: 5 |
| Number of requests for disclosure of personal health information for non-research purposes that were granted or denied since prior IPC review | All 5 requests were granted. |
| Number of requests for disclosure of personal health information for research since prior IPC review | Total requests: 110 |
| Number of requests for disclosure of personal health information for research that were granted or denied since prior IPC review | Total requests granted: 106 Total requests denied: 0 Decision pending: 4 |
| Number of research agreements executed with researchers to whom personal health information was disclosed since the prior IPC review | Total agreements: 101 5 agreements await signature prior to disclosure. |
| Number of requests for disclosure of de-identified and/or aggregate information for research and other purposes since prior IPC review | Total requests: 1 |
| Number of acknowledgements or agreements executed by persons to whom de-identified and/or aggregate information was disclosed for both research and other purposes since prior IPC review | Total agreements: 1 |

Data Sharing Agreements

| Privacy Indicator | Assessment |
|--|--|
| Number of DSAs executed for collection of personal health information since prior IPC review | Total DSAs: 1108. This includes DSAs established for collection of personally identifiable information including but not limited to personal health information. |
| Number of DSAs executed for disclosure of personal health information since prior IPC review | Total DSAs: 5 |

Agreements with Third Party Service Providers

| Privacy Indicator | Assessment |
|--|---------------------|
| Number of agreements executed with third party service providers with access to personal health information since prior IPC review | Total agreements: 1 |

Data Linkage

| Privacy Indicator | Assessment |
|--|---|
| Number and list of data linkages of personal health information approved since prior IPC | Total linkages: 1484 See Appendix C (p. 129-340) for a list and details. |

Privacy Impact Assessments

| Privacy Indicator | Assessment |
|-------------------------------------|------------------|
| Number and a list of PIAs completed | Total number: 96 |

| | |
|--|--|
| | See Appendix D (p. 341-373) for a list and details. |
| Number and a list of PIAs undertaken but not completed | Total number: 26 (35 excluding those 9 not required), See Appendix D (p. 341-373): PIA #s 43, 44, 51, 60, 61, 62, 63, 66, 73, 74, 80, 91, 94, 96, 100, 106, 111, 115, 117, 118, 123, 124, 126, 128, 129, 130 |
| Number and a list of PIAs not undertaken but for which a PIA will be completed and the proposed date of completion | Total number: 0 |
| Number of determinations made that a PIA is not required, and for each the reason | Total number of PIAs that were determined not required: 9 See Appendix D (p. 339-371) for more information including data holding, information system, technology or program at issue. Affected PIA #s and reasons: 10 – Request withdrawn 11 – Request withdrawn 14 – Request withdrawn 25 – Deemed n/a 27 – Request withdrawn 31 – Request withdrawn 82 – Request withdrawn 88 – Request withdrawn 105 – Deemed n/a |
| Number of PIAs reviewed | Total number: 0 |

Privacy Audit Program

| Privacy Indicator | Assessment |
|---|--|
| Dates of audits of agents granted approval to access and use personal health information since prior IPC review and for each audit: A description of each recommendation; Date each recommendation was addressed or is proposed to be so; and Manner each recommendation was, or is proposed to be, addressed | See Appendix E (p. 374-377) for details. |
| Number and list of all other privacy audits since prior IPC review and for each audit: Description of nature and type of audit; Completion date; Description of each recommendation; Date each recommendation was, or is proposed to be, addressed; Manner in which each recommendation was, or is proposed to be, addressed | See Appendix E (p. 374-377) for details. |

Privacy Breaches

| Privacy Indicator | Assessment |
|---|------------------|
| Number of privacy breaches since prior IPC review | Total number: 12 |

| | |
|---|---|
| <p>Date notified Extent Internal/external Nature & extent CEO notified Containment Containment date Third party notice Investigation start Investigation close Recommendations Implemented</p> | <p>See Appendix F (p. 378-384) for details.</p> |
|---|---|

Privacy Complaints

| Privacy Indicator | Assessment |
|--|---|
| <p>Number of privacy complaints since prior IPC review</p> | <p>ICES has not received any privacy complaints since the last IPC review .</p> |
| <p>Of the privacy complaints received, the number investigated since prior IPC review and for each the:</p> <p>Date complaint received; Nature of complaint; Date investigation commenced; Date of letter to individual who complained in relation to the commencement investigation; Date investigation completed; Description of each recommendation; Date each recommendation was, or is proposed to be, addressed; Manner each recommendation was, or is proposed to be, addressed; and Date of letter to individual who complained describing nature and findings of investigation and measures taken</p> | <p>ICES has not received any privacy complaints since the last IPC review .</p> |
| <p>Of the privacy complaints received, the number not investigated since prior IPC review and for each the:</p> <p>Date complaint received; Nature of complaint; and Date of letter to individual who complained and description of letter's content</p> | <p>ICES has not received any privacy complaints since the last IPC review .</p> |

Part 2 – Security Indicators

General Security Policies, Procedures & Practices

| Security Indicator | Assessment |
|--|--|
| Dates security policies and procedures were reviewed since prior IPC review | See Appendix G (p. 385-388) for details. |
| Whether amendments were made to existing security policies and procedures as a result of the review, and a list and description of each | |
| Whether new security policies and procedures were developed and implemented as a result of the review, and description of each | |
| Date each amended and newly developed security policy and procedure was communicated, and nature of communication | |
| Whether communication materials available to public and other stakeholders were amended as a result of the review, and description of amendments | |

Physical Security

| Security Indicator | Assessment |
|---|--------------------------------------|
| Dates of audits of agents granted approval to access the premises and locations within them where personal health information is retained since the prior IPC review: | See Appendix H (p. 389) for details. |
| Description of each recommendation; | |
| Date recommendation was, or is proposed to be, addressed; | |
| Manner in which recommendation was, or is proposed to be, addressed | |

Security Audit Program

| Security Indicator | Assessment |
|---|--|
| Dates of review of system control and audit logs since prior IPC review and description of findings | <p>Logs are configured to be, and are, captured each business day.</p> <p>Due to obsolescence of ICES' security event and information management system during the review IPC review period, logs were not able to be reviewed in a systematic or meaningful manner. ICES' proposed approach to address this is as follows.</p> <p>Procurement and implementation of a new security event and information system in 2020.</p> <p>Use of a third party security operation service or dedicated cybersecurity analyst to monitor and review the logs commencing in 2020.</p> |
| Number and list of security audits since prior IPC review and for each: | See Appendix I (p. 390-395) for details. |
| <p>Description of nature and type of audit;</p> <p>Date completed;</p> <p>Description of each recommendation;</p> <p>Date recommendation was, or is proposed to be, addressed</p> | |

| | |
|---|--|
| Manner in which recommendation was, or is expected to be, addressed | |
|---|--|

Information Security Breaches

| Security Indicator | Assessment |
|---|---|
| Number of notifications of actual or suspected information security breaches since prior IPC review | Total security breaches: 0 Total security incidents: 7 |
| <p>For each actual or suspected information security breach:</p> <p>Date of notification; Extent of actual or suspected breach; Nature and extent of personal health information at issue; Date senior management notified; Containment measures; Date(s) containment measures implemented; Date(s) notification provided health information custodians or others; Date investigation commenced; Date investigation completed; Description of each recommendation; Date recommendation was, or is proposed to be, addressed; Manner in which recommendation was, or is proposed to be, addressed</p> | See Appendix J (p. 396-399) for details. |

Part 3 – Human Resources Indicators

Privacy Training & Awareness

| Human Resources Indicator | Assessment |
|--|---|
| Number of agents who have, and who have not, received initial privacy orientation since prior IPC review | Total orientations received: 564 Total orientations not received: 2 |
| Date of commencement of employment, contractual or other relationship for agents yet to receive initial privacy orientation and the scheduled orientation date | No agents have yet to receive initial privacy orientation. The agents above who failed to attend orientation have left ICES. |
| Number of agents who have, and who have not, attended ongoing privacy training each year since prior IPC review | ICES launched formal annual privacy and security e-learning in July of 2019. Prior to this, ongoing privacy and security awareness activities such as staff presentation and in-services had been carried but not consistently tracked. Since its launch date, 736 agents have completed privacy and security e-learning. 8 agents have yet to complete e-learning, and their accounts and access to any data, including personal health information, has been terminated until they complete e-learning. |
| Dates, number and description of privacy communications to agents since prior IPC review | E-New sletter: communication regarding parameters on use of Indigenous data and related identifiers (25 Apr 2017). E-New sletter: communication regarding a revision to ICES' Privacy Policy and link to resources on phishing (23 Jun 2017). E-New sletter: communication regarding revisions to ICES project PIA and associated procedure (10 Nov 2017). E-New sletter: communication regarding revisions to REB approval of ICES projects (28 Feb 2018). E-New sletter: communication regarding Privacy & Legal Office staff changes (28 Jun 2018). E-New sletter: communication regarding new project PIA completion module (12 Sep 2018). E-New sletter: communication new data use permission form (9 Nov 2018). E-New sletter: communication regarding revision to project PIA form (16 Nov 2018). Staff presentation: communication regarding substantially revised Remote Access Policy (12 Sep 2018). E-New sletter: communication regarding launch of new privacy and security e-learning course (7 Jun 2019). Staff presentation: communication regarding launch of new privacy and security e-learning course (11 Jun 2019). |

Security Training & Awareness

| Human Resources Indicator | Assessment |
|---|---|
| Number of agents who have, and who have not, received initial security orientation since prior IPC review | Total orientations received: 564 Total orientations not received: 2 |
| Date of commencement of employment, contractual or other relationship for agents yet to receive initial security orientation and the scheduled orientation date | No agents have yet to receive initial security orientation. The agents above who failed to attend orientation have left ICES. |
| Number of agents who have, and who have not, attended ongoing security training each year since prior IPC review | ICES launched formal annual privacy and security e-learning in July of 2019. Prior to this, ongoing privacy and security awareness activities such as staff presentation and in-services had been carried but not |

| | |
|--|---|
| | consistently tracked. Since its launch date, 736 agents have completed privacy and security e-learning. 8 agents have yet to complete e-learning and their accounts and access to any data, including personal health information, has been terminated until they complete e-learning. |
| Dates and number of security communications to agents since prior IPC review | E-New sletter: communication regarding resources on phishing (23 Jun 2017). Staff presentation: communication regarding substantially revised Remote Access Policy (12 Sep 2018). Various email communications, Intranet postings and two staff presentations (attendance was optional) relating to general security awareness from spotting phishing emails to understanding hacking threats occurred during the month of Oct 2019 in recognition of International Security Month. |

Confidentiality Agreements

| Human Resources Indicator | Assessment |
|---|--|
| Number of agents who have, and who have not, signed confidentiality agreements each year since prior IPC review | Total agreements signed including initial and annual agreements: (November 1, 2016 - March 31, 2017): 89 (April 1, 2017 - March 31, 2018): 739 (April 1, 2018 - March 31, 2019): 850 (April 1, 2019 - October 31, 2019): 804 Total annual agreements not signed: (November 1, 2016 - March 31, 2017): 0 (April 1, 2017 - March 31, 2018): 0 (April 1, 2018 - March 31, 2019): 2 (April 1, 2019 - October 31, 2019): 1 |
| Date of commencement of employment, contract or other relationship for agents yet to execute confidentiality agreements and date agreement must be executed | April 1, 2018 - March 31, 2019): 2 agreements were not signed by ICES Abstractors whose relationship with ICES each commenced 18 May 2018. They are no longer at ICES. (April 1, 2019 – October 31, 2019): 1 agreement was not signed by an agent who started on 6 Feb 2018 because of a leave of absence. This agent must renew the agreement on return to ICES. |

Termination or Cessation

| Human Resources Indicator | Assessment |
|---|--|
| Number of notifications from agents since prior IPC review for termination of their employment, contractual or other relationship | Total notifications: 321 This number reflects all terminations whether or a not they involved notification from the agents. |

Part 4 – Organizational Indicators

Risk Management

| Organizational Indicator | Assessment |
|--|---|
| Dates corporate risk register was reviewed since prior IPC review | 12 Jan 2017 13 Apr 2017 7 Jun 2017 25 Sep 2017 18 Jan 2018 16 Apr 2018 12 Jun 2018 24 Sep 2018 17 Jan 2019 10 Apr 2019 14 Jun 2019 23 Sep 2019 |
| Whether amendments were made to the corporate risk register as a result of the review, and description of each | No amendments were made to the risk register as a result of the reviews. However, the risk register is undergoing review to become a more mature and integrated risk management framework for the organization. The expected implementation date of the revised framework is early-to-mid 2020. |

Business Continuity & Disaster Recovery

| Organizational Indicator | Assessment |
|---|---|
| Dates business continuity and disaster recovery plan was tested since prior IPC review. | The plan was tested in Oct 2018. A component of the plan, specifically crisis communication, was tested in Dec 2019 and a more extensive test specifically of IT systems was carried out in Jan 2020. The next test is slated for completion in Dec 2020. |
| Whether amendments were made to business continuity disaster recovery plan as a result of testing, and description of each. | The 2018 test resulted in a minor adjustment to the order of operations and was reflected in the support documentation, specifically the technical workbook and communications framework. Tests conducted in 2020 did not result in any amendments. |

D. Sworn Affidavit

SWORN AFFIDAVIT

I, Dr. Michael Schull, Chief Executive Officer of the Institute for Clinical Evaluative Sciences (ICES) , MAKE
OATH AND SAY:

1. ICES has in place policies, procedures and practices to protect the privacy of individuals whose personal health information is received and to maintain the confidentiality of that information.
2. The policies, procedures and practices implemented by ICES comply with the *Personal Health Information Protection Act, 2004* and the regulations thereto, as may be amended from time to time.
3. The policies, procedures and practices implemented by ICES comply with the *Manual for the Review and Approval of Prescribed Persons and Prescribed Entities* that has been published by the Information and Privacy Commissioner of Ontario, as it may be amended from time to time.
4. ICES has submitted a written report to the Information and Privacy Commissioner of Ontario in compliance with the *Manual for the Review and Approval of Prescribed Persons and Entities*.
5. ICES has taken steps that are reasonable in the circumstances to ensure compliance with the policies, procedures and practices implemented and to ensure that the personal health information received is protected against theft, loss and unauthorized use or disclosure and to ensure that records containing personal health information are protected against unauthorized copying, modification or disposal.

SWORN BEFORE ME

in the City of Toronto on 29 October 2019.


Commissioner for Taking Affidavits
LSUC # 67999B


Michael Schull
Chief Executive Officer
ICES

E. Appendices

Appendix A – Privacy Policies & Procedures

| Name | Review Date(s) | Amendment/ New Documentation Required | Amendment/New Policy Description | Agent Communication Date | Nature of Agent Communication | Public Communication Materials Amended | Description of Amendments to Communications Materials |
|--|----------------|---------------------------------------|---|--------------------------|-------------------------------|--|---|
| Privacy Policy | Mar-18 | Amendment | Names removed under required reviewers; titles updated; formatting changes | Mar-18 | Intranet posting | Yes | Refreshed public website privacy page |
| | Aug-19 | Amendment | Updated titles; changed to new template; revised information about ICES' status as a PE to s. 18(1) of O. Reg. 329/04 | Oct-19 | Intranet posting | Yes | Refreshed public website privacy page |
| Public website privacy page | Sep-19 | Amendment | Updated CPLO title | n/a | n/a | Yes | Public website privacy page updated |
| Privacy Information, Inquiries & Complaints Policy | Mar-18 | Amendment | Names removed under required reviewers; titles updated; formatting changes | Mar-18 | Intranet posting | No | n/a |
| | Jul-19 | Amendment | Moved to new policy template; titles updated | Jul-19 | Intranet posting | No | n/a |
| Privacy Inquiries & Complaints Procedures | May-19 | Amendment | Updated role names; added to new template | Jul-19 | Intranet posting | No | n/a |
| Privacy Inquiry & Privacy Complaints Log | Oct-19 | Amendment | Updated for role name changes | n/a | n/a | No | n/a |
| ICES Privacy Complaint Form | Oct-19 | Amendment | Added new logo | n/a | n/a | No | n/a |
| ICES Privacy Complaint Report | Oct-19 | Amendment | Added new logo | n/a | n/a | No | n/a |
| ICES Privacy Inquiry Report | Oct-19 | Amendment | Added new logo | n/a | n/a | No | n/a |
| Privacy Complaint Response 1 A | Oct-19 | No Amendment | None | n/a | n/a | No | n/a |
| Privacy Complaint Response 1 B | Oct-19 | No Amendment | None | n/a | n/a | No | n/a |
| Privacy Complaint Response 2 | Oct-19 | No Amendment | None | n/a | n/a | No | n/a |
| Collection of Personally | Mar-18 | Amendment | Names removed under required reviewers; titles updated; formatting changes | Mar-18 | Intranet posting | No | n/a |

| Name | Review Date(s) | Amendment/ New Documentation Required | Amendment/New Policy Description | Agent Communication Date | Nature of Agent Communication | Public Communication Materials Amended | Description of Amendments to Communications Materials |
|--|----------------|---------------------------------------|--|--------------------------|-------------------------------|--|---|
| Identifiable Information Policy | Jun-19 | Amendment | Moved to new policy template; titles updated; removed "for research purposes" under Policy Scope, as ICES collects PII for purposes beyond research | Jul-19 | Intranet posting | No | n/a |
| Collection of Personally Identifiable Information Procedures | Nov-16 | Amendment | Added Data Partnerships and Development among the group of recipients of signed DSA notifications for CUD/GUD. | Nov-16 | Intranet posting | No | n/a |
| | Jan-17 | Amendment | Updated Non-PII section to clarify responsibility of DQIM to import data collected pursuant to data sharing request form. | Jan-17 | Intranet posting | No | n/a |
| | Aug-19 | Amendment | Updated role titles and department names; updated responsibilities for communicating approval of PIAs and preparation of DSAs; revised "approval" to "assessment" regarding PIAs; updated requirement for PIA and DSA amendments when either specifies fewer variables than what is provided to ICES; updated processes for collection of PII for third party research | Oct-19 | Intranet posting | No | n/a |
| ICES Data Sharing Agreement (HIC) | Oct-19 | No Amendment | None | n/a | n/a | No | n/a |
| ICES Data Sharing Agreement (Researcher) | Jun-19 | Amendment | Added information about destruction of indirect identifiers and derivatives of data collected | n/a | n/a | No | n/a |
| ICES Data Sharing Agreement (Researcher - Other Information) | Oct-19 | No Amendment | None | n/a | n/a | No | n/a |
| ICES Data Sharing Agreement (Other Authority) | Oct-19 | No Amendment | None | n/a | n/a | No | n/a |

| Name | Review Date(s) | Amendment/ New Documentation Required | Amendment/New Policy Description | Agent Communication Date | Nature of Agent Communication | Public Communication Materials Amended | Description of Amendments to Communications Materials |
|--|----------------|---------------------------------------|--|--------------------------|-------------------------------|--|---|
| ICES Data Sharing Agreement (Researcher - PHI and Other information) | Oct-19 | No Amendment | None | n/a | n/a | No | n/a |
| Privacy Impact Assessment Policy | Mar-17 | Amendment | Update role names | Mar-17 | Intranet posting | No | n/a |
| | Mar-18 | Amendment | Names removed under required reviewers; titles updated; formatting changes | Mar-18 | Intranet posting | No | n/a |
| | Jul-19 | Amendment | Moved to new policy template; titles updated | Jul-19 | Intranet posting | No | n/a |
| ICES Project PIA Form | May-19 | Amendment | Added section for Controlled Macros; revised several CUD to GUD | May-19 | Intranet posting | No | n/a |
| ICES Project PIA Review Procedure | Jun-17 | Amendment | Add capture of REB-approved retention timeframe to Privacy Officer review | Jun-17 | Intranet posting | No | n/a |
| | Oct-17 | Amendment | Changes in Project PIA mean more sections specified for PO to review , scale back to single PO review , communicate approval to helpdesk to initiate RAE updates. SharePoint now used for some document control. PCOA takes over creation of project folders | Oct-17 | Intranet posting | No | n/a |
| | Sep-18 | Amendment | Changes in Project PIA mean conditions for Controlled Macros must be verified; Program Leader approval is not required for amendments to Schedule 1, Part A; auto-approved amendments may be submitted directly to PLO; change in role titles | Sep-18 | Intranet posting | No | n/a |

| Name | Review Date(s) | Amendment/ New Documentation Required | Amendment/New Policy Description | Agent Communication Date | Nature of Agent Communication | Public Communication Materials Amended | Description of Amendments to Communications Materials |
|--|----------------|---------------------------------------|---|--------------------------|-------------------------------|--|---|
| | Aug-19 | Amendment | Project PIAs and amendments requiring PLO review are submitted to the appropriate Research Program, not directly to PLO; revised "approval" of project PIAs and amendments to "review and assessment"; notification of completion of PLO review now provided by Privacy SME who reviews the forms rather than the PLA; distinguished between steps required for amendments involving PLO review and assessment, and amendments that require email notification only | Oct-19 | Intranet posting | No | n/a |
| ICES PIA Form - Data Holding | Jan-19 | Amendment | Added new logo | n/a | n/a | No | n/a |
| ICES PIA Form - Service Provider | Oct-19 | No Amendment | None | n/a | n/a | No | n/a |
| ICES PIA Form - General | Oct-19 | No Amendment | None | n/a | n/a | No | n/a |
| ICES PIA Form - Data Disclosure | Jun-19 | No Amendment | None | n/a | n/a | No | n/a |
| Privacy Audit & Monitoring Policy | Mar-18 | Amendment | Names removed under required reviewers; titles updated; formatting changes | Mar-18 | Intranet posting | No | n/a |
| | May-19 | Decommissioned | Replaced, along with Security Audit & Monitoring Policy, with Internal Audit policy | May-19 | Intranet posting | No | n/a |
| | May-19 | New | Establishes systematic internal audit approach. Applies to Privacy, Security, Reactive, Compliance and Operational audits | May-19 | PLO meeting; intranet posting | No | n/a |
| Privacy Monitoring Log & Report Forms Workbook | Oct-19 | No Amendment | None | n/a | n/a | no | n/a |
| | Oct-19 | No Amendment | None | n/a | n/a | no | n/a |
| Privacy Audit Report Form Template | Oct-19 | No Amendment | n/a | n/a | n/a | No | n/a |

| Name | Review Date(s) | Amendment/ New Documentation Required | Amendment/New Policy Description | Agent Communication Date | Nature of Agent Communication | Public Communication Materials Amended | Description of Amendments to Communications Materials |
|--|----------------|---------------------------------------|--|--------------------------|--|--|---|
| Privacy Incident Management Policy | Jul-19 | Amendment | Updates to department and role names; added new ICES logo | Jul-19 | Intranet posting | No | n/a |
| Privacy Incident Log & Breach Reports | Oct-19 | Amendment | Updated for role name changes | n/a | n/a | No | n/a |
| Protection of ICES Data Policy | Mar-18 | Amendment | Names removed under required reviewers; titles updated; formatting changes | Mar-18 | Intranet posting | No | n/a |
| | Aug-19 | Amendment | Additional information about third party researchers added by DAS | Oct-19 | Intranet posting | No | n/a |
| Research Analytics Environment (RAE) | May-17 | Amendment | Updated to provide more detail around transfer to PC (student transfers, file locations, distribution) | May-17 | Intranet posting | No | n/a |
| | May-18 | Amendment | Updated to address free text data fields | May-18 | Intranet posting | No | n/a |
| | Dec-18 | Amendment | Explicitly permit use of email and prohibit use of file sharing platforms | Dec-18 | Intranet posting | No | n/a |
| | Feb-19 | Amendment | Explicitly prohibit transfer of individual-level data from RAE to LAN | Feb-19 | Intranet posting | No | n/a |
| | Jun-19 | Amendment | Update to new template | Jul-19 | Intranet posting | No | n/a |
| Privacy Awareness & Training Policy | Mar-19 | Amendment | Included information about annual privacy & security e-learning module | Mar-19 | Intranet posting; PLO meeting; staff email | No | n/a |
| Privacy & Security Awareness Procedure | May-18 | Amendment | Define more robust processes for notification and suspension of individuals with outstanding annual confidentiality agreement renewals | May-18 | Intranet posting | No | n/a |
| | Aug-19 | Amendment | Inserted procedures to address completion and tracking of annual e-training | Aug-19 | Intranet posting; staff-wide meeting | No | n/a |
| Privacy Awareness Requirements Table | Jul-19 | No Amendment | n/a | n/a | n/a | No | n/a |
| Privacy Awareness Log | Oct-19 | No Amendment | None | n/a | n/a | No | n/a |

| Name | Review Date(s) | Amendment/ New Documentation Required | Amendment/New Policy Description | Agent Communication Date | Nature of Agent Communication | Public Communication Materials Amended | Description of Amendments to Communications Materials |
|--|----------------|---------------------------------------|---|--------------------------|---------------------------------------|--|---|
| Privacy & Security Awareness Attendance Sheet | Oct-19 | No Amendment | None | n/a | n/a | no | n/a |
| ICES Confidentiality Agreement (General) | Apr-19 | Amendment | Updated department names | Apr-19 | Intranet posting | No | n/a |
| ICES Confidentiality Agreement (Abstractor) | Apr-19 | Amendment | Updated department names | Apr-19 | Intranet posting | No | n/a |
| ICES Confidentiality Agreement (Data Covenantor) | Apr-19 | Amendment | Updated department names | Apr-19 | Intranet posting | No | n/a |
| ICES Collaborating Researcher NDA | Mar-19 | Amendment | Added new logo | Mar-19 | Intranet posting | no | n/a |
| ICES NDA | Mar-19 | Amendment | Added new logo | Mar-19 | Intranet posting | No | n/a |
| Research Ethics Review Policy | Mar-18 | Amendment | Names removed under required reviewers; titles updated; formatting changes | n/a | n/a | No | n/a |
| | Feb-19 | Amendment | Removed requirement for annual retrospective approval of ICES Projects by Sunnybrook REB; clarified criteria for determining when ICES Projects requires REB approval; clarified when approval specifically by Sunnybrook REB is required; introduced requirement of Pls to seek REB approval at his/her local institution if ICES is not his/her primary affiliation; removed requirement for REB approval when simply contacting individuals including physicians | Feb-19 | Intranet posting; OnTap communication | No | n/a |

| Name | Review Date(s) | Amendment/ New Documentation Required | Amendment/New Policy Description | Agent Communication Date | Nature of Agent Communication | Public Communication Materials Amended | Description of Amendments to Communications Materials |
|--|----------------|---------------------------------------|--|--------------------------|---------------------------------------|--|---|
| Research Ethics Review Procedure | Feb-18 | Amendment | Removed requirement to obtain Sunnybrook REB approval in all cases; set out requirement for DSAs in all cases of PDC involving medical record abstraction at hospitals/clinics; clarified that ICES Project PIA approval should precede REB approval | Feb-19 | Intranet posting; OnTap communication | No | n/a |
| | May-19 | Amendment | Moved to new template | n/a | n/a | No | n/a |
| Protecting Personal Health Information on Mobile Devices | Mar-18 | Amendment | Names removed under required reviewers; titles updated; formatting changes | n/a | n/a | No | n/a |
| | May-19 | Amendment | Updated role titles; added to new template | May-19 | Intranet posting | No | n/a |
| Management of Data Convenantors Procedures | Jan-17 | Amendment | Added DQ team | n/a | n/a | No | n/a |
| | Sep-19 | Amendment | Minor wording changes | Sep-19 | Intranet posting | No | n/a |
| Creating Coded Data at ICES Procedure | May-19 | Amendment | Free-text field expanded | n/a | n/a | No | n/a |
| Abstractor Onboarding and Offboarding Procedure | Sep-19 | Amendment | Updated titles and template | n/a | n/a | No | n/a |
| Log of ICES Abstractors | Oct-19 | Amendment | Add date last reviewed | n/a | n/a | No | n/a |
| Re-identification Risk Assessment Procedure | Jan-18 | Amendment | Removed exception related to presentations | Jan-18 | Intranet posting | No | n/a |

| Name | Review Date(s) | Amendment/ New Documentation Required | Amendment/New Policy Description | Agent Communication Date | Nature of Agent Communication | Public Communication Materials Amended | Description of Amendments to Communications Materials |
|--|----------------|---------------------------------------|---|--------------------------|-------------------------------|--|---|
| Re-identification Risk Assessment Procedure | Jul-19 | Amendment | Changed to new template; updated titles; changed wording in Responsibility section, as one could infer from original wording that the RIRA doesn't necessarily need to be completed by the Responsible ICES Scientist | Jul-19 | Intranet posting | No | n/a |
| Re-identification Risk Clearance Log | Oct-19 | No Amendment | None | n/a | n/a | No | n/a |
| ICES Pre-Submission Checklist for ICES Manuscripts and Reports | Aug-19 | No Amendment | None | n/a | n/a | No | n/a |
| Dataset Creation Plan Procedure | May-17 | Amendment | Updated AP template | n/a | n/a | No | n/a |
| Management of Data Convenantors Procedures | May-18 | Amendment | Updated role titles and added detail to roles and responsibilities | n/a | n/a | No | n/a |
| Dataset Creation Plan (General) | Mar-19 | No Amendment | None | n/a | n/a | No | n/a |
| DAS Project Intake, Adjudication & Initiation Procedure | Oct-17 | Amendment | Removed individual names from reviewer list; updated AP template | n/a | n/a | no | n/a |
| | Sep-19 | Amendment | Updated role and department titles | n/a | n/a | No | n/a |
| Verifying & Posting Risk-Reduced Data to IDAVE Procedure | Oct-18 | Amendment | Replace PARAT with Re-identification Risk Assessment Tool | Oct-18 | Intranet posting | No | n/a |
| | Sep-19 | Amendment | Change to role titles | n/a | n/a | No | n/a |

| Name | Review Date(s) | Amendment/ New Documentation Required | Amendment/New Policy Description | Agent Communication Date | Nature of Agent Communication | Public Communication Materials Amended | Description of Amendments to Communications Materials |
|--|----------------|--|----------------------------------|--------------------------------|----------------------------------|---|--|
| ICES Data & Analytic Services Agreement - Research | Sep-19 | No Amendment | None | n/a | n/a | No | n/a |
| ICES Data & Analytic Services Agreement – Research & PSD | Sep-19 | No Amendment | None | n/a | n/a | no | n/a |
| ICES Data & Analytic Services Agreement – Research & PSD (Other Information) | Sep-19 | No Amendment | None | n/a | n/a | no | n/a |
| DAS Projects Log | Sep-19 | No Amendment | None | n/a | n/a | no | n/a |
| DAS Request Form | Sep-19 | No Amendment | None | n/a | n/a | no | n/a |
| DAS Confirmation of Feasibility Form | Sep-19 | No Amendment | None | n/a | n/a | No | n/a |

Appendix B – List of Statements of Purpose

| Data Holding | Purpose of Data Holding | Need for Data in Relation to the Purpose | Description of Data | Source |
|---|--|---|--|--------------|
| Assistive Devices Program (ADP) | ADP captures data associated with Ontario residents with long-term physical disabilities who receive funding for customized equipment appropriate for the individual's basic needs. | The data are required to conduct analysis and compile statistical information with respect to the evaluation, planning and monitoring of the health system, and to support related research, specifically in the areas of supporting funding to Ontario residents who have long-term physical disabilities and access to personalized assistive devices appropriate for the individual's basic needs. | Patient-level data associated with: <ul style="list-style-type: none"> • mobility aids • hearing aids and other devices • communication aids • visual aids • diabetic equipment and supplies • respiratory equipment and supplies • home oxygen therapy • artificial eyes and facial prosthetics • custom orthotic braces, compression garments and lymphedema pumps • prosthetic breasts or limbs | MOHLTC |
| Cancer Activity Level Reporting (ALR) | ALR data are collected for reporting and analysis purposes. It represents the basic set of data elements required to produce the quality, cost and performance indicators for the provincial cancer system. | The data are required to conduct analysis and compile statistical information with respect to the evaluation, planning and monitoring of the health system, and to support related research, specifically in the area of treatment provided to cancer patients. | <ul style="list-style-type: none"> • Clinical data • Patient-level data • Patient-level activity within the cancer system focused on radiation and systemic therapy services and outpatient oncology clinic visits | CCO |
| Ontario Asthma dataset (ASTHMA) | ASTHMA collects data, which includes all Ontario asthma patients identified since 1991 for the purpose of identifying cases, validation measures, citations for each cohort creation, data availability, prevalence and incidence flags. | The data are required to conduct analysis and compile statistical information with respect to the evaluation, planning and monitoring of the health system, and to support related research, specifically in the area of prevalence and incidence of asthma in Ontario | <ul style="list-style-type: none"> • Patient-level data • It is a cumulative ICES-derived database updated annually using updated OHIP, DAD, SDS, and RPDB data. | MOHLTC, CIHI |
| Better Outcomes Registry and Network (BORN) | BORN collects data for health care encounters, which are integrated across the continuum of care for the mother and infant. Data collected provides information on: maternal demographics and health behaviors, pre-existing maternal health problems, obstetric complications, intrapartum interventions, prenatal screening, antenatal | The data are required to conduct analysis and compile statistical information with respect to the evaluation, planning and monitoring of the health system, and to support related research, specifically in the area(s) of pregnancy, labour, birth and early newborn care. | <ul style="list-style-type: none"> • Patient-level data (infant and maternal) • Demographic data (e.g., birth date, infant sex, maternal age) • Clinical and self-reported health data (e.g. health conditions, procedures, treatments, outcomes, health behaviours) | CHEO |

| Data Holding | Purpose of Data Holding | Need for Data in Relation to the Purpose | Description of Data | Source |
|---|---|--|---|--|
| | general, antenatal specialty, postpartum mother and child outcomes. | | | |
| Bariatric Registry (BRTRC) | The Bariatric Registry collects information on bariatric treatments across Ontario to understand different treatment effects and results. Data are collected for the purposes of identifying and informing decision makers of practices and health care service areas that need improvement. | The data are required to conduct research, specifically in the area of bariatric surgery. | <ul style="list-style-type: none"> • Demographic data • Baseline clinical data (BMI, comorbidities, medications) • Follow-up clinical data (BMI, comorbidities, medications) • surgical procedures and complications • quality of life data • socio-economic data | Dr. Mehran Anvari |
| Client Agency Program Enrolment (CAPE) | CAPE is a database which lists patients who have ever enrolled or de-enrolled with a family physician. This system helps to identify enrolled patients who may no longer be seeing the physician they are enrolled with, even though this physician is still being paid for being their family physician. | The data are required to conduct analysis and compile statistical information with respect to the evaluation, planning and monitoring of the health system, and to support related research, specifically in the area primary health care. | <ul style="list-style-type: none"> • Data on enrolment of an individual in a program with a specific practitioner and group | MOHLTC |
| Community Business Intelligence (CBI) | CBI collects individual-level service utilization data across health service providers, maintaining a single repository that contains information on patients' use of community-based services and their length of stay. | The data are required to conduct analysis and compile statistical information with respect to the evaluation, planning and monitoring of the health system, and to support related research, specifically in the area of community health services in the sectors of community addictions, community mental health, and community support services | <ul style="list-style-type: none"> • Aggregate service utilization data across health service providers • Use of community-based services and length of stay | CAMH, Reconnect |
| Canadian Community Health Survey (CCHS) | CCHS is a Statistics Canada Survey that collects health-related data (health status, health care utilization, and health determinants for the Canadian population) at the sub-provincial levels of geography. The primary purpose of CCHS data is for health surveillance | The data are required to conduct analysis and compile statistical information with respect to the evaluation, planning and monitoring of the health system, and to support related research, specifically in the area(s) of the links between health behaviour and | <ul style="list-style-type: none"> • Demographic data (e.g., birth date, sex, health problems, occupation and Ontario geographic codes) • Health-related self-ratings (e.g., re: healthy behaviors, health services utilization) | MOHLTC, Statscan Ontario Sharing Files were provided by Statistics Canada and modified by MOHLTC before being |

| Data Holding | Purpose of Data Holding | Need for Data in Relation to the Purpose | Description of Data | Source |
|---|---|--|---|--------------------------|
| | <p>and population research. Federal and provincial departments of health and human resources, social service agencies, and other types of government agencies use the information collected from respondents to monitor, plan, implement and evaluate programs to improve the health of Canadians. Researchers from various fields use the information to conduct research to improve health. Non-profit health organizations and the media use the CCHS results to raise awareness about health, an issue of concern to all Canadians.</p> | <p>determinants of health and health care utilization.</p> | | <p>shared with ICES.</p> |
| <p>Cardiac Care Network (CCN) (Now "CorHealth")</p> | <p>CCN provides equitable, timely and appropriate access to cardiac services in the province of Ontario. CCN collects registry data for the purposes of facilitating and monitoring access to cardiac surgery.</p> | <p>The data are required to conduct analysis and compile statistical information with respect to the evaluation, planning and monitoring of the health system, and to support related research, specifically in the area(s) of cardiovascular procedures and surgeries.</p> | <ul style="list-style-type: none"> • Includes all cardiac surgical procedures, catheterization, coronary artery bypass graft surgery (CABG), percutaneous coronary intervention (PCI), electrophysiology procedures (diagnostic studies and ablations), cardiac device implantation, transcatheter aortic valve implantation (TAVI), and other transcatheter structural heart interventions e.g., mitral valve clip, left atrial appendage closure | <p>CorHealth Ontario</p> |
| <p>Continuing Care Reporting System (CCRS)</p> | <p>CCRS collects demographic, administrative, clinical and resource utilization information who receive continuing care services in hospitals or long-term care homes in Canada. Data are collected at the point of care. Real time reports flag resident risks and inform care planning, which help to guide care and system-wide planning as well as provide quality improvement.</p> | <p>The data are required to conduct analysis and compile statistical information with respect to the evaluation, planning and monitoring of the health system, and to support related research, specifically in the area of a wide range of continuing care services. This range includes hospital-based continuing care (e.g., complex continuing care, extended/chronic care) and residential care providing 24-hour nursing services (e.g.,</p> | <ul style="list-style-type: none"> • Assessment-level data • Admission-level data • Residents-level data • Facility-level data | <p>MOHLTC</p> |

| Data Holding | Purpose of Data Holding | Need for Data in Relation to the Purpose | Description of Data | Source |
|---|---|---|--|--|
| | | nursing home, home for the aged). | | |
| Ontario Census Area Profiles (CENSUS) | Every ten years, households receive a short-form census questionnaire where the following data is extracted; age and sex, family, language, aboriginal peoples, education, labor, immigration and citizenship, and ethnicity. Census data provides demographic and statistical data which is used to plan public services (health care, education, transportation), assess the economic state of the country and develop socioeconomic status indicators. | The data are required to conduct analysis, compile statistical information and to support related research. | <ul style="list-style-type: none"> Ontario-level demographic and statistical data on individuals and households | Statistics Canada |
| Canada Census area profiles (CENSUSCA) | Every ten years, households receive a short-form census questionnaire where the following data is extracted; age and sex, family, language, aboriginal peoples, education, labor, immigration and citizenship, and ethnicity. Census data provides demographic and statistical data which is used to plan public services (health care, education, transportation), assess the economic state of the country and develop socioeconomic status indicators. | The data are required to conduct analysis, compile statistical information and to support related research. | <ul style="list-style-type: none"> Canada-level demographic and statistical data on individuals and households | Statistics Canada |
| Laboratory Data from South-Western Ontario Hospitals (CERNER) | To permit evaluation of laboratory-based outcomes in individuals residing in Southwestern Ontario. | The data are required to conduct analysis and compile statistical information with respect to the evaluation, planning and monitoring of the health system, and to support related research, specifically in the area of laboratory-identified outcomes (acute kidney injury, etc.) | <ul style="list-style-type: none"> Patient-level laboratory data | London Health Sciences Centre and St. Joseph's Hospital on behalf of 12 hospitals in Southwestern Ontario. |

| Data Holding | Purpose of Data Holding | Need for Data in Relation to the Purpose | Description of Data | Source |
|---|---|---|---|--------------------------------|
| Canadian Cystic Fibrosis Data Registry (CFDR) | CFDR collects data on individuals with a confirmed diagnosis of cystic fibrosis based on current guidelines, for the purpose of ensuring data entries are standardized and consistent in cystic fibrosis clinics across Canada. The data collected within the Registry can be used to better understand clinic populations, respond to emerging health care issues, develop quality improvement initiatives and track clinical outcomes over time | The data are required to conduct analysis and compile statistical information with respect to the evaluation, planning and monitoring of the health system, and to support related research, specifically in the areas of knowledge improvement of disease patterns and care of patients with cystic fibrosis, to translate the knowledge into improved outcomes for people with cystic fibrosis. | <ul style="list-style-type: none"> Includes patient-level data on patients with cystic fibrosis | MOHLTC; Cystic Fibrosis Canada |
| Congestive Heart Failure (CHF) | The CHF database contains all Ontario individuals with CHF identified since 1991. The CHF database collects data to help identify cases of CHF from primary care patient records and administrative data. | The data are required to conduct analysis and compile statistical information with respect to the evaluation, planning and monitoring of the health system, and to support related research, specifically in the area of the prevalence and incidence of congestive heart failure in Ontario. | <ul style="list-style-type: none"> Includes patient-level data on individuals who meet the administrative data-based definition of CHF, including a diagnosis date. | MOHLTC, CIHI, |
| IRCC Permanent Residents database (IRCC) | IRCC data contains permanent residents' demographic information, such as country of citizenship, level of education, mother tongue and landing date. IRCC data is collected for the purposes of health research, evaluation and support for health policy and program development for the population. | The data are required to conduct research, specifically in connection with permanent resident populations. | <ul style="list-style-type: none"> The data contains permanent residents' demographic information, such as country of citizenship, country of birth, level of education, mother tongue, landing date, skills, immigrant categories, etc. | IRCC |
| Canadian Joint Replacement Registry (CJRR) | CJRR collects patient-specific information (clinical, surgical and prosthesis) on hip and knee replacement surgeries performed in hospital. Data are collected for the purposes of recording and analyzing clinical parameters and | The data are required to conduct analysis and compile statistical information with respect to the evaluation, planning and monitoring of the health system, and to support related research, specifically in the area of hip and knee | <ul style="list-style-type: none"> Patient-specific information (clinical, surgical and prosthesis) on hip and knee replacement surgeries performed in hospital. | CIHI |

| Data Holding | Purpose of Data Holding | Need for Data in Relation to the Purpose | Description of Data | Source |
|--|---|--|--|--------------------------|
| | outcomes of primary and revision hip and knee replacements over time. | replacement for the aging population. | | |
| Clinical Liver Database (CLD) | CLD contains clinical information from patients seen at the Toronto Western Hospital Liver Clinic from 2000 to 2014. CLD collects data on demographics, medications, laboratory results and clinical status at each visit, for the purpose of compiling a standardized clinical record. | The data are required to conduct analysis and compile statistical information with respect to the evaluation, planning and monitoring of the health system, and to support related research, specifically in the area of liver disease of varied etiologies, most commonly alcohol-related, non-alcoholic fatty liver disease, viral hepatitis and auto-immune | <ul style="list-style-type: none"> • Data on demographics, medications, laboratory results and clinical status at each visit, as compiled in the clinic's standardized clinical record. | Toronto Western Hospital |
| Yearly Health Services Contact (CONTACT) | Patient contact and eligibility yearly files contain records of individuals who are eligible for OHIP. | The data are required to conduct analysis and compile statistical information with respect to the evaluation, planning and monitoring of the health system, and to support related research, specifically in the areas of health services research. | <ul style="list-style-type: none"> • Files are created by ICES using in-house datasets received from MOHLTC and CIHI. The files contain, for each quarter of a calendar year: <ul style="list-style-type: none"> ○ A marker indicating RPDB eligibility status ○ A marker indicating any health care contact (hospital visit, OHIP claim, OBD claim, nursing home resident etc.) ○ A marker indicating CAPE enrolment | MOHLTC, CIHI |
| Chronic Obstructive Pulmonary Disease (COPD) | COPD contains all Ontario COPD patients identified since 1991, which enables identification of individuals with physician diagnosed COPD in health administrative databases. | The data are required to conduct analysis and compile statistical information with respect to the evaluation, planning and monitoring of the health system, and to support related research, specifically in the area of respiratory disease. | <ul style="list-style-type: none"> • Patient-level data • Yearly prevalence and incidence of COPD in Ontario • COPD diagnosis date | MOHLTC, CIHI |
| Canadian Organ Replacement Registry (CORR) | CORR records and analyzes the level of activity and outcome of vital organ transplantation and renal dialysis activities. CORR provides extended access to recipients receiving treatment outside Ontario. CORR collects data to provide: a national view on end-stage organ failure statistics for comparative | The data are required to conduct analysis and compile statistical information with respect to the evaluation, planning and monitoring of the health system, and to support related research, specifically in the areas of organ transplant and renal replacement therapy. | <ul style="list-style-type: none"> • Contains data on hospital dialysis programs, transplant programs, organ procurement organizations and independent health facilities that track patients from their first treatment for end-stage organ failure (dialysis or transplantation) to their death. | CIHI |

| Data Holding | Purpose of Data Holding | Need for Data in Relation to the Purpose | Description of Data | Source |
|------------------------------------|--|--|--|----------------------|
| | analyses and research studies, an opportunity to facilitate better treatment decisions and statistics on long-term trends (used for planning; and optimizing programs) and lastly to provide statistics to the health care industry to enhance business. | | | |
| Corporate Provider Database (CPDB) | Files are maintained by the MOHLTC Provider Services branch containing information about all physician and some non-physician providers funded by the Ministry. CPDB uses this data to create their database, for the purposes of providing information on demographic, eligibility, speciality and practice location of physicians and non-physicians. | The data are required to conduct analysis and compile statistical information with respect to the evaluation, planning and monitoring of the health system, and to support related research, specifically related to physician services. | <ul style="list-style-type: none"> Individual-level physician data including birth year (for age), sex, year of graduation, practice location. | MOHLTC |
| Client Profile Database (CPRO) | CPRO contains long-term care home application information at the patient level such as patient characteristics and location at application, long-term care home choices and milestone events through the placement process. CPRO collects data for the purposes of tracking patients waiting for long-stay placement in Ontario long term care homes and tracking requests for change of placement for those already residing in long term care. | The data are required to conduct analysis and compile statistical information with respect to the evaluation, planning and monitoring of the health system, and to support related research, specifically in the area(s) of long-term care placement in Ontario" | <ul style="list-style-type: none"> Patient-level long term care home application information Patient long term home choices | MOHLTC |
| CT/MRI Abstracted Data (CTMRI) | Data were compiled through abstraction of a consecutive series of Computerized Topography (CT) and Magnetic Resonance Imaging (MRI) scans performed after April 1, 2004 from twenty-nine randomly selected Ontario hospitals. The | The data are required to conduct analysis and compile statistical information with respect to the evaluation, planning and monitoring of the health system, and to support related research, specifically in the area(s) of CT and MRI images | <ul style="list-style-type: none"> CT and MRI scans were restricted to the 3 most common scanning regions for each type of scan: CT abdomen/pelvis, CT brain, CT chest, MRI brain, MRI extremities, and MRI spine | 25 Ontario hospitals |

| Data Holding | Purpose of Data Holding | Need for Data in Relation to the Purpose | Description of Data | Source |
|---|---|--|---|---------------------|
| | <p>purpose was to describe common indications for outpatient CT and MRI scanning in Ontario, determine the frequency of normal/abnormal/intermediate scans and lastly to determine the frequency in which further diagnostic testing was recommended after the scan was performed.</p> | | | |
| <p>Discharge Abstract Database (DAD)</p> | <p>DAD captures administrative (institution-hospital number, admission category, length of stay, disposition), clinical (diagnoses, procedures, physician) and demographic information (patient gender, date of birth, postal code, county and residence code), on hospital discharges including deaths, sign-outs and transfers.</p> | <p>The data are required to conduct analysis and compile statistical information with respect to the evaluation, planning and monitoring of the health system, and to support related research, specifically in the areas of evaluation of inpatient services use, in-patient deaths, acute care availability, case costing and service transfers.</p> | <ul style="list-style-type: none"> • Contains information about patient separations, such as: <ul style="list-style-type: none"> ○ Clinical data (diagnoses, procedures, physician) ○ Demographic data (patient gender, date of birth, postal code, county and residence code) ○ Administrative data (institution/hospital number, admission category, length of stay, disposition) ○ Data used to evaluate patient length of stay and resource consumption, as defined using case mix group, complexity and resource intensity weight ○ Additional data on mental health inpatients (since 1998/99) | <p>CIHI, MOHLTC</p> |
| <p>Quarterly Discharge Abstract Database (DADQ)</p> | <p>Comprises cuts of both NACRS and DAD data compiled on a quarterly basis.</p> | <p>The data are required to conduct analysis and compile statistical information with respect to the evaluation, planning and monitoring of the health system,</p> | <ul style="list-style-type: none"> • Contains information about patient separations, such as: <ul style="list-style-type: none"> ○ Clinical data (diagnoses, procedures, physician) | <p>CIHI, MOHLTC</p> |

| Data Holding | Purpose of Data Holding | Need for Data in Relation to the Purpose | Description of Data | Source |
|---|---|---|---|---------------------------|
| | | <p>and to support related research, specifically in the area of evaluation of inpatient services use, in patient deaths, acute care availability, case costing and service transfers.</p> | <ul style="list-style-type: none"> ○ Demographic data (patient gender, date of birth, postal code, county and residence code) ○ Administrative data (institution/hospital number, admission category, length of stay, disposition) ○ Data used to evaluate patient length of stay and resource consumption, as defined using case mixed group, complexity and resource intensity weight ○ Additional data on mental health inpatients (since 1998/99) | |
| <p>Ontario Dementia Database (DEMENTIA)</p> | <p>The Ontario Dementia Dataset is comprised of all Ontario persons who have been identified with Alzheimer's and related dementias in ICES data holdings between the ages of 40 to 110 years.</p> | <p>The data are required to conduct analysis and compile statistical information with respect to the evaluation, planning and monitoring of the health system, and to support related research, specifically in the area of prevalence and incidence of dementia</p> | <ul style="list-style-type: none"> • Patient-level data on all Ontarians who were identified with dementia (including Alzheimer's) between the ages of 40 to 110 years since 1988 • DEMENTIA is a cumulative ICES-derived database updated annually using updated OHIP, DAD, SDS, ODB and RPDB data | <p>CIHI, MOHLTC</p> |
| <p>Drugs List (DIN)</p> | <p>The Drugs List data set contains information on drug and product names, subclass information, product codes, drug strength, route of administration, first and last dispensing dates from OD. This data set is used to obtain a list of drug information numbers (DINs) which fall under generic drug names/drug subclasses, to look up properties of a drug such as strength,</p> | <p>The data are required to conduct analysis and compile statistical information with respect to the evaluation, planning and monitoring of the health system, and to support related research, specifically in the area of treatment duration, patient outcomes, drug intervention for specific disease.</p> | <ul style="list-style-type: none"> • Near exhaustive list of DINs used in Canada from 1990 forward • Contains information on drug and product names, subclass information product codes, drug strength, route of administration, first and last dispensing dates from ODB | <p>Brogan Inc, MOHLTC</p> |

| Data Holding | Purpose of Data Holding | Need for Data in Relation to the Purpose | Description of Data | Source |
|--|---|--|---|--|
| | and to gather information on doses of drug dispensed in an ODB claim. | | | |
| Dialysis Measurement Analysis & Reporting System (DMAR) | DMAR is an innovative web-based application that facilitates the collection of prospective high-quality data about the care of patients with kidney disease. | The data are required to conduct analysis and compile statistical information with respect to the evaluation, planning and monitoring of the health system, and to support related research, specifically in the areas of dialysis patients at specific sites in Ontario. | <ul style="list-style-type: none"> Contains characteristics and outcomes, including modality changes, hospitalization, transplantation, treatment withdrawal, and death | 5 Ontario hospitals. |
| Drug Product Database (DPD) | The DPD contains product specific information on legal drugs approved for use and authorized for sale by Health Canada such as drugs for humans and animals, disinfectants, radiopharmaceutical drugs and biological drugs for humans. | The data are required to conduct analysis and compile statistical information with respect to the evaluation, planning and monitoring of the health system, and to support related research, specifically in the area of drug utilization. | <ul style="list-style-type: none"> Contains product and company information on drug products marketed in Canada, as collected by Health Canada | Health Canada |
| Enhanced Feedback for Effective Cardiac Treatment (EFFECT) | The EFFECT consists of clinical data such as acute myocardial infarction, and congestive heart failure for the purpose of measuring and improving the quality of cardiac care. The purpose of the collection was to determine whether developing and publishing report cards based on clinical data collected from patient charts leads to greater use of evidenced based therapy at hospitals that receive them. | The data are required to conduct analysis and compile statistical information with respect to the evaluation, planning and monitoring of the health system, and to support related research, specifically in the areas of cardiac care. | <ul style="list-style-type: none"> Patient-level, clinical data collected from patient charts after acute myocardial infarction and congestive heart failure | 85 Ontario hospitals |
| Electronic Medical Records Primary Care – Master Linking Crosswalk (EMRPC) | EMRPC consists of clinically relevant information maintained by family physicians practicing in Ontario derived from electronic medical records (EMRs). EMRPC data is collected for the following purposes: validating methods for identifying patients with particular disease conditions using administrative data, | The data are required to conduct analysis and compile statistical information with respect to the evaluation, planning and monitoring of the health system, and to support related research, specifically in the areas of primary care, health systems, and population health. | <ul style="list-style-type: none"> Patient-level data Clinical data included in patient's electronic medical record (e.g., medical history, current health problems, treatments prescribed, clinical notes, test results, etc.) | Data is collected through Physician participation. |

| Data Holding | Purpose of Data Holding | Need for Data in Relation to the Purpose | Description of Data | Source |
|--|--|---|--|--------|
| | developing automated, accurate methods for identifying patients with disease conditions within the EMR, providing feedback regarding physician performance on quality indicators for several chronic diseases, and examining wait times for referrals from primary care physicians to specialists. | | | |
| OHIP's Emergency Claims Database (ERCLAIM) | ERCLAIM comprises data on billings by Emergency Doctors, in order to enable ICES to separate OHIP billings for patient visits that occur in the Emergency Department from regular office visits. | The data are required to conduct analysis and compile statistical information with respect to the evaluation, planning and monitoring of the health system, and to support related research. | <ul style="list-style-type: none"> Contains OHIP records identified as occurring in the Emergency Department Created in-house at ICES using a subset of OHIP records received from MOHLTC | MOHLTC |
| Symptom Management Database (ESAS) | The Symptom Management Database is a web-based symptom screening tool provided by CCO to healthcare providers (and their patients where available) to monitor patients symptoms. Data are collected for the purpose of improving symptom management and collaborative palliative care planning through earlier identification, documentation and communication of patient symptoms and performance status. | The data are required to conduct analysis and compile statistical information with respect to the evaluation, planning and monitoring of the health system, and to support related research, specifically in the area of cancer care. | <ul style="list-style-type: none"> This data holding consists four smaller datasets: Edmonton Symptom Assessment System (ESAS), Eastern Cooperative Oncology Group Performance Status (ECOG), Patient Reported Functional Status (PRFS), and Palliative Performance Scale (PPS). This data holding provides information on patients' symptoms and functional status during their journey of cancer care. | CCO |
| Estimated Schedule of Benefits (SOB) price associated with each OHIP fee code and suffix. (ESTSOB) | Comprises details about physician services and billing requirements for various procedures and visits. | The data are required to conduct analysis and compile statistical information with respect to the evaluation, planning and monitoring of the health system, and to support related research, and specifically to create a standard price for services recorded in the OHIP database. Used for costing analyses. | <ul style="list-style-type: none"> A list of the average or most frequently billed price for each OHIP fee code or fee suffix. Created in-house at ICES using a subset of OHIP records received from MOHLTC | MOHLTC |
| Surname-based Ethnicity | Canada's two largest visible minority populations, South | The data are required to conduct analysis and compile statistical | <ul style="list-style-type: none"> The database classifies people according to their probable ethnic background, | MOHLTC |

| Data Holding | Purpose of Data Holding | Need for Data in Relation to the Purpose | Description of Data | Source |
|--|---|--|---|--|
| Group (ETHNIC) | Asians and Chinese are excluded from Ontario's administrative ethnicity data. Both of these populations have unique identifiable surnames not shared with other ethnic groups. The lists deliberately excludes surnames, which, while they may be common in the South Asian or Chinese population, are not unique to that population. As a result, the South Asian list includes predominantly Hindu surnames and is therefore most representative of Indian surnames; Muslim surnames from Pakistan and Bangladesh are often shared with Muslim populations from other world regions, and so are not included in the list. These exclusions provide very low sensitivity for the South Asian and Chinese population. Collecting data serves the useful purpose in defining a cohort of South Asian and/or Chinese individuals in a study where this is the primary exposure of interest. | information with respect to the evaluation, planning and monitoring of the health system, and to support related research, specifically in the areas of ethnicity-based determinants of health and health care utilization. | with three categories: South Asian, Chinese, and other. This is the only source of (very limited) ethnicity information on all Ontarians. | |
| GAPP Decision Support Systems (Physician Payments) | GAPP contains non-OHIP-related payments for health care providers (e.g. primary care organizations) for the purpose of examining population health care cost. | The data are required to conduct analysis and compile statistical information with respect to the evaluation, planning and monitoring of the health system, and to support related research, specifically in the area of physician compensation. | <ul style="list-style-type: none"> Information on non-fee-for-service payments made to physicians through various alternate payment plans. | MOHLTC |
| Gamma Dynacare Medical Laboratories (GDML) | GDML collects data by linking outpatient serum/urine test data from 225 Gamma-Dynacare laboratories across Ontario from 2002 to 2016. | The data are required to conduct analysis and compile statistical information with respect to the evaluation, planning and monitoring of the health system, and to support related research, specifically in the areas of laboratory | <ul style="list-style-type: none"> Patient-level data including date and results of a variety of outpatient laboratory serum/urine test data from 225 Gamma-Dynacare laboratories across Ontario for 2002 to 2016. | Dynacare Gamma Laboratory Partnership dba Dynacare |

| Data Holding | Purpose of Data Holding | Need for Data in Relation to the Purpose | Description of Data | Source |
|--------------------------------------|---|--|--|------------------|
| | | confirmed disease, including cardiovascular disease, kidney disease and diabetes. | | |
| Home Care Database (HCD) | HCD contains information on clients, intake, assessment, admission, diagnostic and surgical procedure, and service delivery. Data are collected for the purpose of helping home care clinicians code diseases and other health conditions that frequently occur in home care. | The data are required to conduct analysis and compile statistical information with respect to the evaluation, planning and monitoring of the health system, and to support related research, specifically in the area of home care services. | <ul style="list-style-type: none"> • Data on all home care visits between fiscal years 2005/06 to the current time, including date and type of visit. • Basic demographic and health-related characteristics of individuals who received home care visits during this period | HSSO, OACCAC |
| Home Care Database - MOHLTC (HCDMOH) | HCD collects data for the purpose of providing clinical insight into patients who encounter service through Ontario's Community Care Access Centres (CCACs). | The data are required to conduct analysis and compile statistical information with respect to the evaluation, planning and monitoring of the health system, and to support related research, specifically in the area of home care services. | <ul style="list-style-type: none"> • Data on all home care visits between fiscal years 1994/05 and 2014/15, including date and type of visit. • Basic demographic and health-related characteristics of individuals who received home care visits during that period | MOHLTC |
| Health Care Experience Survey (HCES) | HCES is a cross-sectional voluntary telephone survey conducted for the purpose of examining the attachment to primary care providers in Ontario and the public's experience with other aspects of the health care system. | The data are required to conduct analysis and compile statistical information with respect to the evaluation, planning and monitoring of the health system, and to support related research, specifically to measure attachment to primary care providers in Ontario, the public's experience including wait times at service providers, walk-in clinics and emergency departments, referral to specialists. | <ul style="list-style-type: none"> • Public experiences with aspects of the health system (Ontarians age 16 and older.) | MOHLTC |
| Ontario HIV Database (HIV) | The Ontario HIV Database contains all Ontario HIV positive patients identified since 1992. | The data are required to conduct analysis and compile statistical information with respect to the evaluation, planning and monitoring of the health system, and to support related research, specifically in the areas of HIV diagnoses, new infections and health care utilization trends among people living with HIV in Ontario. | <ul style="list-style-type: none"> • Clinical data including date of HIV diagnoses, prevalence and incidence each year | MOHLTC, CIH-DA D |

| Data Holding | Purpose of Data Holding | Need for Data in Relation to the Purpose | Description of Data | Source |
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| Ontario HIV Treatment Network (HIVOHTN) | An anonymous, observational, open, dynamic cohort study of individuals with HIV who have been diagnosed and have entered care in Ontario. The data are collected for the purposes of conducting scholarly research that contributes to an improved understanding of HIV, providing improved treatment for people living with HIV, and helping people living with HIV get better access to care. | The data are required to conduct analysis and compile statistical information with respect to the evaluation, planning and monitoring of the health system, and to support related research, specifically in the areas of engagement in HIV care and the characteristics and health care utilization patterns of individuals living with HIV and engaged in care. | <ul style="list-style-type: none"> • Patient-level data: sociodemographic data, social determinants of health • Clinical characteristics • Laboratory data | OHTN |
| Health Links Datasets (HLINK) | Health Link is a team of providers in a geographic area working together to provide coordinated health care to patients with multiple complex conditions (often seniors) with the patient at the center. The Health Link program aims to engage patients and their care providers to ensure that the plan is being followed, that patients are taking the right medications and that patients have a care provider who knows them. The Health Link program's purposes are to improve access to care, reduce wait times and prevent unnecessary hospital and emergency visits. | The data are required to conduct analysis and compile statistical information with respect to the evaluation, planning and monitoring of the health system, and to support related research, specifically in the areas of coordinated care services provided to patients of high needs. | <ul style="list-style-type: none"> • Data includes: <ul style="list-style-type: none"> ○ Care coordination status ○ LHIN number of patient residence ○ LHIN name of patient residence ○ LHIN sub-region of patient residence ○ Dates related to patient visit/assessment, case conference completion, and when no longer receiving Health Links care | MOHLTC |
| Health Outcomes for Better Information and Care (HOBIC) | HOBIC focuses on the clinical status of patients admitted to acute care, long-term care, complex continuing care and home care organizations in Ontario. HOBIC collects data for the purposes of developing a standard for the assessment of clinical information reflective of nursing care across the province, providing information to support quality improvement | The data are required to conduct analysis and compile statistical information with respect to the evaluation, planning and monitoring of the health system, and to support related research. | <ul style="list-style-type: none"> • Data includes measures of the acute care, complex continuing care, home care, and long-term care setting in Ontario from December 2006 to March 2012. | 160 Ontario health care sites |

| Data Holding | Purpose of Data Holding | Need for Data in Relation to the Purpose | Description of Data | Source |
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| | <p>initiatives at organizations and promoting evidence-based health system planning, policymaking and research through linkage to health outcomes.</p> | | | |
| <p>High Services User (HSU)</p> | <p>High Service Users are individuals who comprise a large percentage of health care services and incur a large percentage of costs. Close examinations of these high user populations provides valuable insight into the health care system and highlight opportunities for improvement such as: integration and continuity of clinical and social care, increased resources for home care and long-term care (particularly for palliative patients), and increased focus on disease prevention and health promotion.</p> | <p>The data are required to conduct analysis and compile statistical information with respect to the evaluation, planning and monitoring of the health system, and to support related research, specifically related to individuals identified as "high service users". High service users are identified based on either their frequency of use (specifically emergency departments), their length of stay in hospital, or their overall costs within a given fiscal year. By having a consistent definition of high system user (rather than having every study use a unique definition), we are better able to understand who these individuals are, how they differ from those with less frequent/intensive health service use, and where there may be opportunities to intervene to reduce the need for acute care use.</p> | <ul style="list-style-type: none"> • These data are derived from a combination of the Discharge Abstract Database (when looking at high system use based on inpatient care) and the National Ambulatory Care Reporting System that ICES receives from CIHI and include: <ul style="list-style-type: none"> ○ Basic demographic data ○ Encounter dates (dates of admission and discharge for inpatient stays; dates and time stamps for emergency department visit start and end) ○ Most responsible diagnosis ○ Procedures ○ Service type (for inpatient stays) ○ Discharge disposition ○ Use of ambulance (for emergency department visits) ○ Triage acuity (for emergency department visits) ○ Type of stay/visit (i.e. planned vs. emergency) ○ Flag identifying high system user status ○ Hospital identifier | <p>CIHI</p> |
| <p>Ontario Hypertension dataset (HYPER)</p> | <p>HYPHER contains all Ontario hypertension patients identified since 1991, for the purposes of including algorithms for identifying cases, validation measures, citations for each cohort creation, data availability, prevalence and incidence flags.</p> | <p>The data are required to conduct analysis and compile statistical information with respect to the evaluation, planning and monitoring of the health system, and to support related research, specifically in the areas of identifying hypertension cases, including incident and prevalent hypertension cases in a certain year.</p> | <ul style="list-style-type: none"> • Patient-level data, • Demographic data • Diagnosis date (since 1991), age at diagnosis, prevalent flags since 1991 and incident flags since 1994 <p>Created in-house at ICES using data received from MOHLTC and CIHI</p> | <p>MOHLTC, CIHI</p> |
| <p>Information about Ontario health care</p> | <p>INST contains a series of datasets regarding Ontario's health care</p> | <p>Datasets such as the hospital discharge</p> | <p>The INST datasets map the institution numbers to the name, type (e.g. acute care hospital,</p> | <p>MOHLTC</p> |

| Data Holding | Purpose of Data Holding | Need for Data in Relation to the Purpose | Description of Data | Source |
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| institutions funded by the MOHLTC (INST) | system which enable the assignment of numbers to each institution funded by the MOHLTC. | <p>database, the OHIP physician claims database and the National Ambulatory Care Reporting System (NACRS) database identify places of care using the institution number. INST allows ICES to use this institution number for purposes of:</p> <ul style="list-style-type: none"> • estimating the distance that patients travel to receive care (based on the distance from the patient's postal code to the institution's postal code) • examining the effect of hospital volume on treatment outcomes (which requires knowing the history of changes in the institution number for a given institution over time) • determining which individuals are living in a long-term care institution (by determining the institution type for the institution number noted in physician claims) | nursing home), and location (e.g., postal code, LHIN) of the institution. They also map the institution numbers to the umbrella facility number, indicate which hospitals have academic affiliations, and provide a chronological history of changes to the institution numbers assigned to the same institution | |
| ICES Physician Database (IPDB) | ICES Physician Database contains yearly information about all physicians in Ontario for the purposes of physician profiling, predicting physician behavior, and measuring physician supply. | The data are required to conduct analysis and compile statistical information with respect to the evaluation, planning and monitoring of the health system, and to support related research, specifically in the areas of practice | <ul style="list-style-type: none"> • Information about physician specialties, demographics, practice characteristics and relative workload. | MOHLTC, OPHRDC |

| Data Holding | Purpose of Data Holding | Need for Data in Relation to the Purpose | Description of Data | Source |
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| | | and personal characteristics of physicians providing services in Ontario. | | |
| Local Health Integration Network (LHIN) | LHIN is comprised of data from 14 not-for-profit corporations who work with local health providers in planning, funding, integrating and delivering local home care services to citizens across the city to meet the needs of residents. LHIN health services include hospitals, community care access centres, community support services, long-term care, mental health and addictions services and community health centres. | The data are required to conduct analysis and compile statistical information with respect to the evaluation, planning and monitoring of the health system, and to support related research, specifically in the areas of planning, integrating and funding local health services. | <ul style="list-style-type: none"> • 1 record for each of the 14 different geographic areas of Ontario with the following information for each LHIN: LHIN number, name, population, localization index (percent of hospitalizations occurring at local high-volume hospitals), number of high-volume hospitals, list of high-volume hospitals (names and institution numbers). • Contains one record for each of the 175 acute care hospitals in Ontario • Residence codes (based on Ontario municipal boundaries) linkage to LHIN • Yearly population estimates and projections by single years of age and sex | MOHLTC, Statistics Canada, Ontario Ministry of Finance, Intellihealth Ontario |
| Management Information System (MIS) | MIS is a comprehensive reporting system for use by hospitals across Canada, for the purpose of providing management information to assist health care managers in allocating and utilizing resources more efficiently and effectively. | The data are required to conduct analysis and compile statistical information with respect to the evaluation, planning and monitoring of the health system, and to support related research, specifically in the areas of financial accounting and management statistics related to the day-to-day operations of health service organizations. | <ul style="list-style-type: none"> • Balance sheet data (e.g., current assets, long-term liabilities) • Income statement data (e.g., revenue, expenses, gains, losses) • Revenue and expense information • Functional (accounting) centre data • Statistical information (e.g., nursing service recipient workload, earned hours, number of meals, volunteer hours of service) | MOHLTC |
| Linked Delivering Mother and New borns (MOMBABY) | MOMBABY dataset links the DAD inpatient admission records of delivering mothers and their new borns for the purpose of corresponding records between a mother-child pair. | The data are required to conduct analysis and compile statistical information with respect to the evaluation, planning and monitoring of the health system, and to support related research, specifically in the areas of perinatal health. | <ul style="list-style-type: none"> • Demographic data (e.g., birth date, infant sex, maternal age) • Clinical health data (e.g. birth outcome, length of gestation, birth weight, parity, admission and discharge date) | MOHLTC, CIHI |
| National Ambulatory Care Reporting System (NACRS) | NACRS captures information on patient visits to hospital and community based ambulatory care such as day surgery, outpatient clinics and emergency | The data are required to conduct analysis and compile statistical information with respect to the evaluation, planning and monitoring of the health system, | <ul style="list-style-type: none"> • Data on all hospital-based and community-based ambulatory care (e.g. day surgery, outpatient and community-based clinics, and emergency departments) | MOHLTC, CIHI |

| Data Holding | Purpose of Data Holding | Need for Data in Relation to the Purpose | Description of Data | Source |
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| | departments within Ontario. NACRS collects data for the purposes of processing and analyzing summary data on institution-based ambulatory care, supporting management decision making at the hospital, facilitating provincial and national comparative reporting and supporting related approved analysis and research. | and to support related research, specifically in the areas of (1) identifying patients treated at emergency departments, dialysis clinics, cancer clinics, and people receiving same day surgeries, (2) service volume, and (3) identifying specific health care needs of Ontarians. | | |
| Quarterly National Ambulatory Care Reporting System Quarterly (NACRSQ) | NACRS contains data for all hospital-based and community based ambulatory care: day surgery, outpatient and community-based clinics and emergency departments. NACRSQ data are received by ICES approximately two months after the end of each quarter. | The data are required to conduct analysis and compile statistical information with respect to the evaluation, planning and monitoring of the health system, and to support related research, specifically in the areas of (1) identifying patients treated at emergency departments, dialysis clinics, cancer clinics, and people receiving same day surgeries, (2) service volume, and (3) identifying specific health care needs of Ontarians. | <ul style="list-style-type: none"> Data on all hospital-based and community-based ambulatory care (e.g. day surgery, outpatient and community-based clinics, and emergency departments) Data are received quarterly (4 times a year) | MOHLTC, CIHI |
| New Drug Funding Program (NDFP) | The NDFP contains data related to funding of new and often expensive cancer drugs for the purpose of ensuring that Ontario patients have equal access to high-quality intravenous (IV) cancer drugs. | The data are required to conduct analysis and compile statistical information with respect to the evaluation, planning and monitoring of the health system, and to support related research, specifically in the areas of systemic therapy in cancer patients. | <ul style="list-style-type: none"> Patient-level data related to funding of cancer medication | CCO |
| Narcotics Monitoring System (NMS) | The NMS collects data on dispensed prescriptions for narcotics, controlled substances and other monitored drugs. NMS data are collected for the purposes of educational and public health and reporting possible criminal conduct to law enforcement agencies. | The data are required to conduct analysis and compile statistical information with respect to the evaluation, planning and monitoring of the health system, and to support related research, specifically in the areas of prescribing practices and use of narcotic analgesics (i.e. | <ul style="list-style-type: none"> Prescription drugs captured in this database include: <ul style="list-style-type: none"> Opioid analgesics (e.g. Tylenol 3®, OxyNEO™) Stimulants (e.g. methylphenidate (Ritalin®)) Benzodiazepines/zolpidem (e.g. Valium®) Barbiturates (e.g. phenobarbital) Testosterone products | MOHLTC |

| Data Holding | Purpose of Data Holding | Need for Data in Relation to the Purpose | Description of Data | Source |
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| | | opioids), non-narcotic controlled drugs (i.e. stimulants, benzodiazepines, barbituates), and other monitored drugs (e.g. testosterone) in Ontario. | <ul style="list-style-type: none"> ○ Other Drugs (i.e. tramadol containing products) • Information on the prescription dispensed (drug identification number, quantity, day supply, route of administration, strength, manufacturer), patient (cardholder ID, age, sex, birth date), prescriber (specialty [i.e. physician, nurse practitioner etc.], prescriber ID), pharmacist ID, and agency where the prescription was dispensed | |
| National Population Health Survey (NPHS) | The NPHS is a longitudinal survey that collects information related to the health of the Canadian population. | The data are required to conduct analysis and compile statistical information with respect to the evaluation, planning and monitoring of the health system, and to support related research, specifically in the areas of evaluating population health status, health care service usage, and lifestyle risk factors such as smoking or alcohol use. | <ul style="list-style-type: none"> • Health survey results about health status and factors impacting health | MOHLTC, StatsCan |
| National Rehabilitation Reporting System (NRS) | The NRS contains patient data collected from participating adult inpatient rehabilitation facilities and programs across Canada. NRS collects data for the purposes of supporting CIHI's mandate, collecting processing and analyzing adult inpatient rehabilitation services, supporting management decision making at the hospital, facilitating provincial and national comparative reporting and supporting related approved analysis and research. | The data are required to conduct analysis and compile statistical information with respect to the evaluation, planning and monitoring of the health system, and to support related research, specifically in the areas of inpatient rehabilitation services | <ul style="list-style-type: none"> • Data on all stays in an inpatient rehabilitation bed. • Patient characteristics at the time of arrival and again at the time of discharge. | MOHLTC |
| New born Screening Ontario (NSO) | NSO screens almost every new born in Ontario for rare but treatable diseases using a combination of advanced laboratory techniques. NSO data are collected for the purposes of retaining | The data are required to conduct analysis and compile statistical information with respect to the evaluation, planning and monitoring of the health system, and to support related research, specifically in | <ul style="list-style-type: none"> • Data from NSO are contained in three types of datasets: <ul style="list-style-type: none"> a) demographic information about the new born and the mother; | CHEO |

| Data Holding | Purpose of Data Holding | Need for Data in Relation to the Purpose | Description of Data | Source |
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| | demographic information about the new born and the mother, blood samples and disease outcomes and diagnoses from NSO screening tests. | the areas of monitoring diseases of new born screened and quality control and quality assurance on the screening tests. | b) blood sample analyte values (concentrations, ratios); c) disease outcomes and diagnoses from NSO screening tests, as based on analyte values and standard diagnostic cut-offs. | |
| Ontario Breast Screening Program (OBSP) | OBSP collects data in the course of operating the breast screening program, including with respect to recruitment, recall, follow-up and ongoing quality assurance in order to provide timely, coordinated assessments of women with abnormal mammograms. | The data are required to conduct analysis and compile statistical information with respect to the evaluation, planning and monitoring of the health system, and to support related research, specifically in the areas of breast cancer prevention | <ul style="list-style-type: none"> • Patient-level data related to mammography (breast X-ray) and a physical examination of the breasts by a physician or a nurse | CCO |
| Ontario Crohn's and Colitis Cohort dataset (OCCC) | OCCC includes all Ontario patients who were identified with Crohn's disease or Ulcerative Colitis from the ages of 0-105 years. | The data are required to conduct analysis and compile statistical information with respect to the evaluation, planning and monitoring of the health system, and to support related research, specifically in the areas of prevalence and incidence of Crohn's disease or Ulcerative Colitis which means Inflammatory Bowel Disease. | <ul style="list-style-type: none"> • Includes all Ontario patients who were identified with Inflammatory Bowel Disease aged 0-105 years since 1991 • Created in-house at ICES and updated annually using data from CIHI and MOHLTC | MOHLTC, CIHI |
| Ontario Case Costing Initiative (OCCI) | OCCI collects case costing data for acute inpatient, day surgery and ambulatory care cases, as well as complex continuing care and rehabilitation cases. Data are collected for the purposes of improving management decision making, development of hospital funding methodologies and ensuring comparability in the costing methodology across hospitals. | The data are required to conduct analysis and compile statistical information with respect to the evaluation, planning and monitoring of the health system, and to support related research, specifically in the areas of health system costs. | <ul style="list-style-type: none"> • Patient-level data • Health system cost data (e.g., estimated costs of acute hospitalizations and emergency department visits) | MOHLTC |
| Ontario Cancer Registry (OCR) | OCR is the provincial database of information for all Ontario residents who have been diagnosed with cancer or who have died of cancer. The OCR collects data | The data are required to conduct analysis and compile statistical information with respect to the evaluation, planning and monitoring of the health system, | <ul style="list-style-type: none"> • Patient demographics, cancer diagnosis details, and death information. | CCO |

| Data Holding | Purpose of Data Holding | Need for Data in Relation to the Purpose | Description of Data | Source |
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| | and exchanges information with other provinces and territories about residents diagnosed or treated outside of Ontario. This approach ensures completeness of provincial cancer records. | and to support related research, specifically in the areas of cancer care. | | |
| Ontario Drug Benefit Claims (ODB) | The ODB database contains claims for prescription drugs received under the Ontario Drug Benefit program. | The data are required to conduct analysis and compile statistical information with respect to the evaluation, planning and monitoring of the health system, and to support related research, specifically in the areas of treatment intervention, diagnosis, patient outcomes and follow-up. | <ul style="list-style-type: none"> Each record represents a drug claim (i.e. a dispensed prescription) paid for by the Ministry of Health Data include: <ul style="list-style-type: none"> Drug identifier Quantity, # days supplied Cost Patient, Pharmacy and Physician identifiers Date prescription was dispensed Long Term Care indicator | MOHLTC |
| Ontario Diabetes Dataset (ODD) | The ODD is a population-based disease registry constructed using a validated algorithm based on hospitalizations and physician visits to identify individuals with physician-diagnosed diabetes mellitus in Ontario. ODD data is collected for the purpose of recording physician-diagnosed diabetes cases. | The data are required to conduct analysis and compile statistical information with respect to the evaluation, planning and monitoring of the health system, and to support related research, specifically in the areas of identify diabetes cases, and incidence/prevalence of diabetes. | <ul style="list-style-type: none"> The Ontario Diabetes Database (ODD and ODD specific) contains all individuals in Ontario with any type of non-gestational diabetes identified since 1991. Created in-house at ICES and updated annually using data from CIHI and MOHLTC | MOHLTC, CIHI |
| Organ Donor Registry (ODR) | The ODR collects data on patients who have registered to be a deceased organ donor and date of registration. | The data are required to conduct analysis and compile statistical information with respect to the evaluation, planning and monitoring of the health system, and to support related research, specifically in the areas of organ donation. | <ul style="list-style-type: none"> Includes the date of registration, donor status and the specific organs that individuals have exempted out of potentially donating | MOHLTC |
| Ontario Home Care Administrative System (OHCAS) | OHCAS collects patient data for purposes related to administering home care services in Ontario. | The data are required to conduct analysis and compile statistical information with respect to the evaluation, planning and monitoring of the health system, and to support related research, specifically in | <ul style="list-style-type: none"> Information on all home care visits for fiscal years 1988/89 – 2005/06, including date and type of visit. Basic demographic and health-related characteristics of individuals who received home care visits during that period | MOHLTC |

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| | | the areas of delivery and receipt of home care services. | | |
| Ontario Health Insurance Plan Claims Database (OHIP) | OHIP data contains most claims paid for by the Ontario Health Insurance Plan. The data covers all health care providers who can claim under OHIP (this includes physicians, groups, laboratories, and out-of-province providers) for the purposes of maintaining a record of the patient and physician, services provided, date of the service, associated diagnosis, and fees paid. | The data are required to conduct analysis and compile statistical information with respect to the evaluation, planning and monitoring of the health system, and to support related research, specifically in the areas of health services utilization, tracking of patient history and patient care trajectory. | <ul style="list-style-type: none"> Each record represents a single service, identified by the fee code, and relates to an individual patient Captures all health care providers who can claim under OHIP (this includes physicians, groups, laboratories, and out-of-province providers with some exceptions) | MOHLTC |
| Ontario Health Study (OHS) | The OHS collects health data through online questionnaires, physical measures and blood samples for the purposes of providing researchers with the resources to investigate the relationship between genetics, lifestyle, the environment and overall health. | The data are required to conduct research, specifically in the areas of cancer and chronic diseases. | <ul style="list-style-type: none"> Demographic data (e.g. birth date, sex, family size, work history, language, ethnicity, income, education) Health-related self-ratings (e.g. personal and family health history, physical activity, eating habits, women's health history, environmental exposures, behaviour, alcohol and tobacco use, sleep patterns, medication history, emotional health and well-being) Test results (e.g. blood tests, mammography, pap test, sigmoidoscopy, and colonoscopy). Acute and chronic conditions (e.g. cancer, infections, cardiovascular diseases, chronic pulmonary obstructive disease (COPD), chronic bronchitis, endocrine disease, thyroid disease, gastrointestinal disease) | The Ontario Institute for Cancer Research |
| Ontario Health Survey (OHSURVEY) | The OHSURVEY collects health data on behalf of Ontario's population which is used to examine self-reported utilization of specific health services. Data can be compared across various socioeconomic strata and health status states, and can be linked to administrative data. This link provides the ability to assess health | The data are required to conduct analysis and compile statistical information with respect to the evaluation, planning and monitoring of the health system, and to support related research, specifically related to the link between health behaviour and determinants of health | <ul style="list-style-type: none"> Individual-level data related to health practices and behaviors | MOHLTC, StatsCan, |

| Data Holding | Purpose of Data Holding | Need for Data in Relation to the Purpose | Description of Data | Source |
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| | status' and concurrent medical conditions in combination with actual health care utilization. OHSURVEY's data serves the purpose of understanding health practices and behaviours that are unattainable from other data sources. | and health care utilization. | | |
| Ontario Laboratories Information System (OLIS) | OLIS provides authorized health care providers access to lab test orders, results from hospitals, community labs and public health labs. As patients move between hospitals, family physicians, home care and long-term care settings, OLIS makes viewing patients current and past test results easier and enables treatment decisions to be made at the point of care. The data collected serves the following purposes: providing a comprehensive and complete lab test history, monitoring progress of treatments, supporting chronic disease management and creates system cost savings by reducing administrative time spent sending lab results and duplicating tests. | The data are required to conduct analysis and compile statistical information with respect to the evaluation, planning and monitoring of the health system, and to support related research, specifically in the areas of clinical lab testing, and disease detection, diagnosis and monitoring. | <ul style="list-style-type: none"> • Demographic data (e.g., birth date, sex, patient address) • Healthcare provider data (e.g., practitioner licensing numbers) • Clinical data (e.g., lab test results, additional information on test requisitions and test types) | MOHLTC |
| Ontario Mental Health Reporting System (OHMRS) | OHMRS collects data on patients in adult designated inpatient mental health beds. | The data are required to conduct analysis and compile statistical information with respect to the evaluation, planning and monitoring of the health system, and to support related research, specifically in the area of mental health hospitalizations. | <ul style="list-style-type: none"> • Diagnosis and intervention data • Demographic data (e.g. age, sex, education, geographic variables) | MOHLTC, CIHI |
| Ontario Myocardial Infarction Dataset (OMID) | OMID links together all of Ontario's major health administrative databases to create a database for monitoring the quality of acute myocardial infarction care in Ontario. | The data are required to conduct analysis and compile statistical information with respect to the evaluation, planning and monitoring of the health system, and to support related research, specifically | <ul style="list-style-type: none"> • Information about the index acute myocardial infarction hospitalization • Interventions received within certain time windows since the index admission • Information about attending physician | MOHLTC, CIHI |

| Data Holding | Purpose of Data Holding | Need for Data in Relation to the Purpose | Description of Data | Source |
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| | | related to acute myocardial infarction. | | |
| Ontario Marginalization Index (ONMARG) | ONMARG is a geographically based index developed to quantify the degree of marginalization occurring across the province of Ontario, which examines residential instability, material deprivation, dependency and ethnic concentration. ONMARG collects data for the purpose of tackling complex urban health issues such as the health consequences of social inequality in cities. | The data are required to conduct analysis and compile statistical information with respect to the evaluation, planning and monitoring of the health system, and to support related research, specifically in the evaluation of inequalities in health, other social problems related to health, and health care access among population groups or geographic areas across Ontario. | <ul style="list-style-type: none"> An area-based index developed to quantify the degree of marginalization occurring across the province of Ontario. It is comprised of four major dimensions thought to underlie the construct of marginalization: residential instability, material deprivation, dependency and ethnic concentration. This dataset was created in-house at ICES using data pulled directly from Toronto Community Health Profiles. | Toronto Community Health Profiles |
| Ontario Rheumatoid Arthritis Dataset (ORAD) | ORAD contains data on all Ontario rheumatoid arthritis patients identified since 1991. ORAD collects data for the purpose of improving the accuracy of Canadian health administrative databases in identifying patients with rheumatoid arthritis. | The data are required to conduct analysis and compile statistical information with respect to the evaluation, planning and monitoring of the health system, and to support related research, specifically in the areas of rheumatoid arthritis diagnoses, incidence and prevalence and health care utilization trends among people living with rheumatoid arthritis in Ontario. | <ul style="list-style-type: none"> Contains both prevalent and incident cases from the beginning of the case-finding period. Created in-house at ICES and updated annually using data from CIHI and MOHLTC | MOHLTC |
| Vital Statistics – Deaths (ORGD) | ORGD contains information on all deaths registered in Ontario starting on January 1990, for the purpose of collecting data on causes of death, and contributing conditions. | The data are required to conduct analysis and compile statistical information with respect to the evaluation, planning and monitoring of the health system, and to support related research, specifically in ascertainment of cause of death. | <ul style="list-style-type: none"> Includes underlying cause of death and immediate cause of death information. | ORG |
| Ontario Renal Reporting System (ORRS) | ORRS collects data on timely chronic kidney disease and renal dialysis, for the purposes of improving system performance, accountability and the quality of chronic kidney disease patient care in Ontario by reporting potential health indicators. | The data are required to conduct analysis and compile statistical information with respect to the evaluation, planning and monitoring of the health system, and to support related research, specifically in the areas of kidney disease for patients attending pre-dialysis | <ul style="list-style-type: none"> Data primarily pertains to patients with End Stage Renal Failure, and also some patients with Acute Kidney Injury receiving outpatient dialysis will be captured. | CCO |

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| | | clinics and those receiving dialysis in an outpatient setting. | | |
| Ontario Stroke Registry (OSR) | The OSR is compiled to monitor and report on the quality of stroke care in Ontario. | The data are required to conduct analysis and compile statistical information with respect to the evaluation, planning and monitoring of the health system, and to support related research, specifically in the areas of stroke and transient ischemic attacks. | <ul style="list-style-type: none"> Clinical data on patients with acute stroke (including ischemic stroke, intracerebral hemorrhage, and subarachnoid hemorrhage) or transient ischemic attack seen in the emergency department or admitted to hospital in Ontario. | 100+ Ontario Hospitals |
| Ontario Trauma Registry (OTR) | OTR identifies, describes and quantifies trauma (injuries) in Ontario. OTR collects data for the following purposes: to collect, process and analyze summary data on hospital trauma separations, to contribute to the reduction of injuries and related deaths by identifying, describing and quantifying trauma, to increase awareness of injury as a public health problem, to assist injury-prevention and treatment programs and to support injury-related approved analysis and research. | The data are required to conduct analysis and compile statistical information with respect to the evaluation, planning and monitoring of the health system, and to support related research, specifically in the areas of Ontario trauma trauma injury events. | <ul style="list-style-type: none"> Contains information regarding trauma team activation upon the admittance of a trauma injury patient in one of the designated trauma center institutions in Ontario Contains information about trauma injury events not contained in other databases such as injury severity score, abbreviated injury scale, Glasgow Coma scale indicators | MOHLTC |
| Primary Care Access Survey (PCAS) | The PCAS is a cross-sectional voluntary telephone survey conducted by the Institute for Social Research at York University. PCAS collects data for the purpose of measuring the number of Ontarians who are able and unable to access a regular family doctor. Data details their experiences in attaining care, their health and sociodemographic characteristics. | The data are required to conduct analysis and compile statistical information with respect to the evaluation, planning and monitoring of the health system, and to support related research, specifically in the area of access to primary care in Ontario. | <ul style="list-style-type: none"> Data includes: <ul style="list-style-type: none"> Health Status Perceptions of the Health Care System in Ontario Family Doctor Status Practice Setting for Family Doctor Utilization of Primary Health Care Services Children's & Dependents' Access to Primary Health Care Services Telehealth Ontario – Awareness and Use Sociodemographic OHIP Status | MOHLTC |
| Postal Code Conversion File (PCCF) | PCCF is a file disseminated by Statistics Canada's Data Liberation Initiative which | The data are required to conduct analysis and compile statistical information with respect | <ul style="list-style-type: none"> Contains macros corresponding to each census year to link the postal codes with the geographic | Statistics Canada, Canada Post Corporation |

| Data Holding | Purpose of Data Holding | Need for Data in Relation to the Purpose | Description of Data | Source |
|--|---|---|---|--------------|
| | links six-character postal codes to standard geographic areas such as dissemination areas, census tracts and census subdivisions. By linking postal codes to standard geographic areas, the file facilitates the extraction and subsequent aggregation of data for selected geographic areas. | to the evaluation, planning and monitoring of the health system, and to support related research, specifically by using postal code to identify census geographic variables | variables based on PCCF+ files since 1996 <ul style="list-style-type: none"> Geographic variables include neighbourhood income quintiles, census division, dissemination area, latitude/longitude, urban/rural | |
| Primary Care Population (PCPOP) | PCPOP is a population level dataset that includes all Ontarians who are deemed alive and eligible at a given point in time for the purpose of retaining information on the physician/group and family health team (FHT) that the patient is enrolled with. | The data are required to conduct analysis and compile statistical information with respect to the evaluation, planning and monitoring of the health system, and to support related research, specifically in the areas of access to primary care, different interdisciplinary models, and physician reimbursement models. | <ul style="list-style-type: none"> Data includes: <ul style="list-style-type: none"> Basic demographic variables Chronic disease flags Hospital readmissions Screening – mammograms/pap/colo rectal Diabetic Care – eye exams/hba1c/lipids Selected specialist visits Number of core primary care visits to the patient's own physician, own group and total visits. Created in-house at ICES using data received from CCO and CIHI | CIHI, CCO |
| Ontario Multispecialty Physician Network dataset (PHYSNET) | Physician Networks are groups of hospitals and physicians, primary care and specialists, which are responsible for the health care of a group of Ontario residents. Data are collected for the purposes of reporting existing patient flow to physicians and hospitals where their patients are admitted, determining structural characteristics, physician specialty and chronic disease strategies of high efficiency networks. | The data are required to conduct analysis and compile statistical information with respect to the evaluation, planning and monitoring of the health system, and to support related research, specifically in the areas of linking patients and/or physicians to physician networks in Ontario. | <ul style="list-style-type: none"> Physician Networks are groups of hospitals and physicians (primary care and specialists) which are responsible for the health care of a group of Ontario residents The physician networks are designed around existing patterns of patient flow and not constrained geographically There are different sets of network datasets created according to different time periods | MOHLTC, CIHI |
| Ontario Paediatric Inflammatory Bowel Disease dataset (PIBD) | The PIBD database includes all Ontario patients who were identified with Inflammatory Bowel Disease when they were aged 18 years or less since 1991, for the purpose of reporting. | The data are required to conduct analysis and compile statistical information with respect to the evaluation, planning and monitoring of the health system, and to support related research, specifically | <ul style="list-style-type: none"> Clinical data on all Ontario patients who were identified with Inflammatory Bowel Disease (IBD, meaning Crohn's disease or colitis) when they were aged 18 years or less since 1991 | MOHLTC, CIHI |

| Data Holding | Purpose of Data Holding | Need for Data in Relation to the Purpose | Description of Data | Source |
|--|--|--|--|-------------------------------------|
| | | related to the incidence and prevalence of Inflammatory Bowel Disease for children in Ontario. | | |
| The Pediatric Oncology Group of Ontario Networked Information System (POGONIS) | POGONIS contains detailed clinical information on childhood cancer cases in Ontario, specifically diagnosis, treatment, complications and long-term outcomes. POGONIS data are collected for the purposes of monitoring the incidence and prevalence of childhood cancer, the demand for cancer care, the nature and specifics of cancer treatment, patient outcomes and long-term effects of childhood cancer and cancer treatment. | The data are required to conduct analysis and compile statistical information with respect to the evaluation, planning and monitoring of the health system, and to support related research, specifically in the areas of pediatric cancer care. | <ul style="list-style-type: none"> Data on childhood cancer cases in Ontario since 1985, including diagnostic information on pediatric cancer patients, specifics of cancer treatment, and patient outcomes | Pediatric Oncology Group of Ontario |
| Ontario Inter-censal Population Estimates and Projections (POP) | Files contain inter-censal and post-censal estimates of the Canadian population by sex and age for the purpose of producing statistics on population, resources, economy, society and culture. | The data are required to conduct analysis and compile statistical information with respect to the evaluation, planning and monitoring of the health system, and to support related research. | <ul style="list-style-type: none"> Contain inter-censal and post-censal estimates of the Ontario population by sex, age, and geographic areas since 1981 | MOHLTLC |
| Canada Inter-censal Estimates (POPCAN) | Files contain inter-censal and post-censal estimates of the Canadian population by sex and age for the purpose of producing statistics on population, resources, economy, society and culture. | The data are required to conduct analysis and compile statistical information with respect to the evaluation, planning and monitoring of the health system, and to support related research. | <ul style="list-style-type: none"> Contain intercensal estimates of the Canadian population by sex and age since 1971 | Statistics Canada |
| Resident Assessment Instrument (RAI) - Contact Assessment (RAICA) | RAICA is a short screening assessment completed for adults at the time of intake to home and/or palliative care. RAICA records essential clinical information on the urgency for home care service, need for further in-depth assessments, and need for specialized services. | The data are required to conduct analysis and compile statistical information with respect to the evaluation, planning and monitoring of the health system, and to support related research, specifically in the areas of home care. | <ul style="list-style-type: none"> Demographic information and reason for home care referral Home care screening items and modular assessments | HSSO |

| Data Holding | Purpose of Data Holding | Need for Data in Relation to the Purpose | Description of Data | Source |
|--|--|--|---|--------------|
| Inter-Resident Assessment Instrument (RAI) - Home Care Assessment System (RAIHC) | RAIHC informs and guides comprehensive care and service planning in community-based settings. Data are collected for the purpose of focusing on the individuals functioning and quality of life by assessing needs, strengths, and preferences, and facilitates referrals and determining formal health care or supportive services options. | The data are required to conduct analysis and compile statistical information with respect to the evaluation, planning and monitoring of the health system, and to support related research, specifically in the area(s) of home care. | <ul style="list-style-type: none"> • Demographic information and reason for home care referral • Home care assessment information | HSSO |
| Resident Assessment Instrument (RAI) - Home Care (MOHLTC) (RAIHC MOH) | The RAIHC MOH database is compiled for the purpose of informing and guiding comprehensive care planning in the current home care environment. Data are used to evaluate needs, strengths, and preferences of elderly clients of home care agencies. | The data are required to conduct analysis and compile statistical information with respect to the evaluation, planning and monitoring of the health system, and to support related research, specifically in the area of home care. | <ul style="list-style-type: none"> • Demographic information and reason for home care referral. • Home care assessment information | MOHLTC |
| Reference Files (Look-up Tables) (REF) | REF contains detailed information on various geographic variables used in conducting population level analysis. | The data are required to conduct analysis and compile statistical information with respect to the evaluation, planning and monitoring of the health system, and to support related research, specifically by identifying geographic area information through look-up tables. | <ul style="list-style-type: none"> • Contains various geographic-related look-up tables. (e.g. Dissemination Area can be linked with other geographic variables such as income quintile) | MOHLTC, CIHI |
| Registered Persons Database (RPDB) | The RPDB database provides demographic information on any individual who has ever received an Ontario health card number, for the purpose of reporting. | The data are required to conduct analysis and compile statistical information with respect to the evaluation, planning and monitoring of the health system, and to support related research, specifically in areas of measurement of patient outcomes such as death. | <ul style="list-style-type: none"> • Basic demographic information on every patient who has ever received an Ontario health card number | MOHLTC, CIHI |
| Same Day Surgery Database (Annual) (SDS) | SDS contains patient-level data for day surgery institutions in Ontario. Every record corresponds to one same-day surgery or procedure stay. Each individual data set | The data are required to conduct analysis and compile statistical information with respect to the evaluation, planning and monitoring of the health system, and to support related | <ul style="list-style-type: none"> • Diagnosis and intervention data • Demographic data (e.g. age, sex, FSA) • Provider (e.g. specialty) data | MOHLTC, CIHI |

| Data Holding | Purpose of Data Holding | Need for Data in Relation to the Purpose | Description of Data | Source |
|---|---|---|--|---|
| | contains cases from one fiscal year. Compiled to support management decision making at the hospital, regional and provincial/territorial levels, facilitate provincial and national comparative reporting, support related approved analysis and research and support the development and use of case-mix and resource utilization grouping methodologies. | research, specifically in the areas of ambulatory surgical care. | | |
| Same Day Surgery Database (Quarterly) (SDSQ) | SDSQ contains patient-level data for day surgery institutions in Ontario. Every record corresponds to one same-day surgery or procedure stay. Each individual data set contains cases from one fiscal year. Compiled to support management decision making at the hospital, regional and provincial/territorial levels, facilitate provincial and national comparative reporting, support related approved analysis and research and support the development and use of case-mix and resource utilization grouping methodologies. | The data are required to conduct analysis and compile statistical information with respect to the evaluation, planning and monitoring of the health system, and to support related research, specifically in the areas of ambulatory surgical care. | <ul style="list-style-type: none"> • Diagnosis and intervention data • Demographic data (e.g. age, sex, FSA) • Provider (e.g. specialty) data • Data received at ICES on a quarterly basis | MOHLTC, CIHI |
| The Applied Research Group for Kids - TARGeT Kids! (TARGeT) | A research study of healthy children aged 0-5 years. The aim of the TARGeT Kids! registry is to link early life exposures to health problems including obesity, micronutrient deficiencies, and developmental problems. Children are enrolled in the TARGeT Kids! registry through their pediatrician or family doctor's offices during regularly scheduled doctor's appointments. Information collected includes height, weight, | The data are required to conduct analysis and compile statistical information with respect to the evaluation, planning and monitoring of the health system, and to support related research, specifically in the areas of child and family health. | <ul style="list-style-type: none"> • Health-related self- and parent-ratings (e.g., re: healthy behaviours, child development), measures of child growth, and nutrition-related biomarkers | Sick Kids Hospital and St. Michael's Hospital |

| Data Holding | Purpose of Data Holding | Need for Data in Relation to the Purpose | Description of Data | Source |
|--|---|--|---|--------------------------------|
| | waist circumference, lifestyle factors (nutrition, physical activity and amount of screen time) and a blood sample | | | |
| Trillium Gift of Life Network (Organ/Tissue Donation Ontario) (TGLN) | TGLN contains donor and transplant recipient information that is used by the provincial agency responsible for coordination of organ and tissue donation and transplantation in Ontario. | The data are required to conduct research, specifically in the areas of organ donation and transplantation. | <ul style="list-style-type: none"> • Individual level recipient and donor data • TGLN links organ donor and transplant recipient information across Ontario from the years 1991 to 2014 • Contains information on deceased patients who were referred for organ donation, whether their families' were approached and whether consent was given for organ donation | TGLN |
| TeleLink Mental Health Program (TLMHP) | TLMHP contains data on children and adolescents who received mental health services through Ontario's Child and Youth Tele-Link Mental Health Program. The data are collected for the purpose of administering the program. | The data are required to conduct analysis and compile statistical information with respect to the evaluation, planning and monitoring of the health system, and to support related research, specifically in the areas of child and youth mental health and addictions in Ontario. | <ul style="list-style-type: none"> • Demographic information • Referral characteristics (reason for referral, family structure, mental health concerns) and clinical assessment measures (diagnosis, counseling and medication recommendations) | CHEO, CPRI, Sick Kids Hospital |

Appendix C – Approved Data Linkages

| # | Project Title | ICES Data |
|---|--|--|
| 1 | "At Home" Research Demonstration Project in Mental Health and Homelessness | CPDB CCRS DAD HCD NACRS NRS ODB OHP OMHRS RAHIC SDS CENSUS RPDB ADP CAPE OHCAS ONMARG "At Home" Research Demonstration Project in Mental Health and Homelessness |
| 2 | "Place of Care" - A Novel Quality Indicator for Assessing End-of-Life Care | CPDB IPDB DIN LHN PCCF INST AVGP/ICE STDPRIC E-CCRS DAD HCD NACRS NRS ODB OHP OMHRS RAHIC RAHIC SDS ASTHMA CHF COPD HIV HYPER ODD OMD CENSUS RPDB CAPE ONMARG ORGO |
| 3 | SARI association with cardiac failure The Canadian perspective | DN PCCF REF DAD NACRS ODB OHP SDS HYPER ODD OMD CONTACT RPDB getag CHF OCR |
| 4 | A Community Paramedicine Initiative for Older Adults Living in Subsidized Housing: Expanding to other communities (CHAP-EMS) | CHAP-EMS Study Dataset_ICES_PIA Amendment |
| 5 | A comparison of atrial fibrillation after early stage breast cancer with cancer-free women | IPDB DN PCCF REF AVGP/ICE ESTSOB DAD NACRS ODB OHP SDS CHF COPD HYPER ODD OMD CENSUS CONTACT RPDB OUS ALR NDPP OBSP OCR ORGO |
| 6 | A comparison of heart failure after early stage breast cancer with cancer-free women | IPDB DN PCCF REF AVGP/ICE ESTSOB DAD NACRS ODB OHP SDS CHF COPD HYPER ODD OMD CENSUS CONTACT RPDB OUS ALR NDPP OBSP OCR ORGO |
| 7 | A comparison of Revision Rates for artificial disc replacement to standard fusion | LHN PCCF REF DAD NACRS OHP CHF OMD CENSUS CONTACT POP RPDB ORGO getag |

| # | Project Title | ICES Data |
|---|--|--|
| 1 | A descriptive analysis of gunshot wound injuries in Ontario | CPDB #PDB DN LHN PCCF REF INST CCRS DAD HCD HOBIC NACRS NRS ODB OHP OMHRS RAICA RAHC SDS ASTHM A CHF COPD HIV HYPER MCMBABY OCC ODD OMD ORAD CENSUS CONTACT POP RPDB HCES ADP CAPE CENSUSCA EMERALD CCHS OCR PCPOP ORGO |
| 2 | A multi-jurisdictional study to determine the impact of repeated immunization on influenza vaccine effectiveness in young children | DAD NACRS ODB OHP SDS ASTHMA CHF COPD HIV MCMBABY ODD RPDB OCR ESTS ESTSOB |
| 3 | A Multi-Province Approach to Real World Evidence Development for Cancer Drugs: A Case Study of Melanoma | CCRS DAD HCD NACRS NRS ODB OHP OMHRS SDS ADP ALR NDPP OCR DN LHN PCCF REF INST AVGPRICE ESTS CENSUS CONTACT POP RPDB |
| 4 | A Personalized Approach to the Epidemiology of Heart Failure in Diabetic Patients Undergoing Cardiac Procedures (Diabetic Heart Failure) | DAD OHP ASTHM A CHF COPD HYPER ODD CENSUS RPDB CCN INST CCRS NACRS DN ODB OMHRS ETHNIC OMD POP OLIS HCN GRS |
| 5 | A Personalized Prediction Model for Disease-Related and All-Cause Hospital Readmission for Patients with Inflammatory Bowel Disease | #PDB PCCF DAD NACRS OHP SDS OCC CONTACT RPDB TOH IBD Admissions |
| 6 | A population based study to compare neurosurgical outcomes in Ontario hospitals with and without a residency program | DN LHN PCCF REF DAD NACRS NRS ODB OHP OMHRS SDS CHF COPD HYPER ODD RPDB CCN Survey Data |
| 7 | A Population Study of the Toxicity and Effectiveness of High-Dose Interferon for High-Risk Melanoma | CPDB POP CAPE ESAS |

| # | Project Title | ICES Data |
|---|--|---|
| 5 | A Population-based Assessment of Opioid Use Before and After Total Joint Arthroplasty | CPDB IPDB DIN LHN PCCF REF INST AVGPRCE STDPRIC E CCRS DAD HCD NACRS NRS ODB OHP OMHRS SDS ASTHMA CHF COPD HYPER ODD OMD ORAD CENSUS CONTACT PCP RPDB ADP HCDMDH OCCI CAPE GAPP OHCAS ONMARG ESTSOB |
| 6 | A POPULATION-BASED MATCHED COHORT STUDY OF HEALTHCARE RESOURCE UTILIZATION IN PATIENTS WITH MYELOPROLIFERATIVE NEOPLASMS | CPDB IPDB DIN LHN PCCF REF INST AVGPRCE ESTSOB CCRS DAD HCD NACRS NRS ODB OHP OMHRS RAICA RAIHC SDS CENSUS CONTACT RPDB ALR NDPP CCR getdiag %getchemocost %getradiationcost |
| 7 | A population-based study evaluating patient outcomes following surgery for spinal metastases | IPDB DIN LHN PCCF REF INST CCRS CORR DAD HCD HOBIC NACRS ODB OHP RAICA ASTHM A CHF COPD HYPER ODD CENSUS RPDB ORGD ALR |
| 8 | A population-based study of health outcomes of HIV-exposed uninfected children using Ontario's administrative databases | IPDB PCCF DAD NACRS ODB OHP HIV MOMBABY CENSUS CONTACT RPDB ADP CAPE GAPP OHCAS OCCI ORGD CIC |
| 9 | A population-based study of individuals with schizophrenia and core delinquent involvement | INST DAD NACRS OHP OMHRS RPDB MCSCS |
| 2 | A Population-Based Study to Quantify the Risks of Opioid Analgesics in Pregnancy | DIN PCCF REF DAD NACRS ODB OHP SDS MOMBABY CENSUS CONTACT RPDB NMS ORGD |

| # | Project Title | ICES Data |
|---|---|--|
| 2 | A Prescribing Cascade Involving Calcium Channel Blockers and Diuretic Agents | PDB PCCF ESTS/OB DAD HCD NACRS ODB OHP CENSUS RPDB CENSUS/CA HCD/MOH OHCAS ALR OCR ORGO POGONS ASTHMA CHF COPD OCCC ODD OMD ORAD |
| 2 | A Prescribing Cascade Involving Cholinesterase Inhibitors | REF AVGP/RE ESTS/OB CCRS CORR DAD HCD NACRS NRS ODB OHP OMHRS SDS CHF COPD HYPHER ODD OMD CENSUS RPDB ADP CAPE GAPP OCCI OHCAS DEMENTIA |
| 3 | A prescribing cascade involving gabapentinoids and diuretic agents | PDB INST CCRS DAD NACRS NRS ODB OHP OMHRS SDS CHF COPD HYPHER ODD CENSUS CONTACT RPDB |
| 3 | A retrospective cohort study of healthcare utilization following paravertebral blocks for chronic axial spine pain in Ontario, Canada | CPDB PDB DIN LHN PCCF REF CCRS DAD HCD NACRS NRS ODB OHP OMHRS SDS CENSUS CONTACT POP RPDB ADP CAPE NMS |
| 2 | A Retrospective Population-Based Cohort Study of the Use of Docetaxel-Based Chemotherapy for Metastatic Prostate Cancer (PHASE 1) | Symptom Management Reporting Database |
| 2 | A retrospective study on the clinical effectiveness of radiofrequency ablation (RFA) for chronic axial spine pain in Ontario | PDB DIN LHN PCCF REF INST DAD NACRS ODB OHP OMHRS SDS ODD CENSUS CONTACT POP RPDB OMHRC CCRS HCD NRS ADP CAPE NDPP |
| 3 | A risk prediction score for the development of incident CKD using administrative data | PCCF AVGP/RE ESTS/OB CCRS DAD HCD NACRS NRS ODB OHP OMHRS RAHC SDS ASTHMA CHF COPD HYPHER ODD OMD RPDB REF HYPHER ODD |

| # | Project Title | ICES Data |
|---|---|--|
| 2 | A sub-project of "Risk of Pediatric and Adolescent Cancer Associated with Medical Imaging" | DAD NACRS OHP MOMBABY RPDB |
| 2 | AC Study: Monitoring trends in the prevalence of HIV and associated factors among African-Caribbean People in Ontario | CPDB DAD NACRS OHP OMHRS ASTHM A HIV ODD OMD RPDB CAPE OLIS A/C Study Data |
| 3 | Accelerated Canadian Application of Evidence to Practice Through Monitoring of Outcomes Research team Endeavour (ACCEPT-MORE) | CPDB IFDB DIN LHN HCD NRS ODB OMHRS ASTHM A ORAD ORGD PCCF REF OLIS ONMARG ALR OCR |
| 3 | Access to Care Across the Transition from Adolescence to Young Adulthood: Mental Health Service Use Among Transition-Age Youth in Ontario | CPDB IFDB DIN LHN PCCF REF INST AVGPRICE ESTSOB DAD HCD NACRS NRS ODB OHP SDS ASTHMA CHF COPD HYPER OCCE ODD ORAD CENSUS RPDB ONMARG ORGD CENSUS CIC |
| 3 | Access to Electronic Medical Record (EMR) data for CNODES studies of drug effects and as a platform for pragmatic trials | DIN OLIS OCR ORGD |
| 3 | Access to Kidney Transplantation: Ontario Renal Program Reports | PCCF REF ORR RPDB ORRS TGLN DAD OHP SDS |
| 3 | Access to medical abortion care in Ontario | CPDB IFDB DIN LHN REF OCB OHP CENSUS RPDB |
| 3 | Access to Optimal Treatment for Patients Diagnosed with the Most Common Cancers in Ontario | PCCF REF DAD NACRS OHP SDS CONTACT RPDB ORGD ALR NDPP OCR (marg) |
| 3 | Access to Outpatient Care for Transgender Individuals After Discharge From Psychiatric Hospitalization or Emergency Department Visit in Ontario | LHN DAD NACRS OCB OHP OMHRS SDS ASTHMA CHF COPD HW HYPER OCCE ODD OMD ORAD CENSUS RPDB ONMARG OCR Transgender Client's Health Information |

| # | Project Title | ICES Data |
|---|---|--|
| 3 | Access to the kidney transplant waitlist across Ontario CKD programs | CPDB #PDB DIN PCCF INST CCRS DAD HCD NACRS ODB OHP OMHRS RAHRC SDS CONTACT RPDB ADP DEMENTIA getag OCR |
| 3 | Accumulating Disabilities After Penetrating Trauma (ADAPT) | DAD NACRS ODB OHP RPDB |
| 3 | Accumulating multimorbidity: the role of depression, socioeconomic status, and other factors | DAD NACRS ODB OHP ASTHMA CHF COPD HIPPER ODD OMD ORAD CONTACT RPDB NPHS CCHS |
| 4 | Accuracy of Ontario Health Administrative Databases in Identifying Patients with Obesity | #PDB DIN LHIN PCCF REF CORR DAD NACRS ODB OHP OMHRS SDS CENSUS CONTACT ADP RPDB OLIS NRS Cohort: Height and Weight Values |
| 4 | Achieving Hepatitis C Elimination in Canada: Addressing the Needs of the Diverse Groups at Risk | CCRS CPRO DAD HCD NACRS NRS ODB OHP OMHRS SDS RPDB ADP CAPE LOC OHCAS OLIS ORGD CIC OCR getag SPHEPHV PHOL Hepatitis 1997-2014 PHO Laboratory Hepatitis C (HCV) and Hepatitis B (HBV) data |
| 4 | ACHRU Community Partnership for Diabetes Self-Management Study 1: High System Users | CPDB #PDB DIN LHIN PCCF REF INST DAD HCD NACRS ODB OHP SDS CENSUS CONTACT RPDB ERCLAIM HCDMDH NPHS OHS ONMARG NDPP OCR ORGO ESAS |
| 4 | Acute and chronic kidney injury in patients with cirrhosis | CPDB #PDB DIN LHIN CORR DAD NACRS ODB OHP SDS MOMBABY CONTACT RPDB OLIS ORGO Cirrhosis Cohort PHO Hepatitis B and C lab data |
| 4 | Acute Kidney Injury as a Result of Co-Administration of Quetiapine and Macrolide Antibiotics | OMHRS |

| | | |
|---|--------------------------------------|---|
| 6 | Acute Kidney Injury Follow-Up Clinic | DAD ORCO OUS ORRS Sunnybrook Acute Kidney Injury Registry Acute Kidney Injury Follow-up Clinic Database and Controls Sunnybrook Controls and UHN Clinic Acute Kidney Injury Follow-up Clinic |
|---|--------------------------------------|---|

| # | Project Title | ICES Data |
|---|--|---|
| 8 | Acute Kidney Injury in Patients with Cancer | DN LHN PCCF REF CORR DAD NACRS ODB OHP SDS RPDB ALR OCR ORGO NDFF |
| 7 | Acute Pain Management and Long-term Opioid Use after Surgery (POP Study) | PDB PCCF DAD NACRS ODB OHP OMHRS SDS ASTHMA CHF COPD HYPER MOMBABY ODD ORAD CONTACT RPDB CAPE ONMARG CCRS HCD NRS OMHRS ADP DEMENTIA gdlacg |
| 8 | Addressing Comorbidities to Improve Independence after Stroke in Ontario | #PDB DN LHN PCCF REF INST DAD NACRS ODB OHP SDS HYPER CENSUS CONTACT RPDB ONMARG ETHNIC DEMENTIA OMHRS SDS ORGO CHF |
| 4 | Addressing the health and economic burden of Lyme disease: A multidisciplinary approach | #PDB CCRS DAD HCD NACRS NRS ODB OHP OMHRS SDS CHF COPD HYPER ODD OMD RPDB ADP CAPE LOC ONCAS PHO Lyme Disease Data OCR Dataset #1: Integrated Public Health Information System (PHIS) Lyme disease dataset Dataset #2: Public Health Ontario Laboratory (PHOL) Lyme disease dataset |
| 3 | Adenosine diphosphate receptor inhibitors in adults over 65 with acute coronary syndrome | DN REF DAD NACRS ODB OHP SDS ASTHMA CHF COPD HYPER ODD CENSUS CONTACT POP RPDB ORGO |
| 3 | Adenosine receptor outcomes: influences of patient, hospital and physician factors | CPDB PDB DN PCCF INST DAD NACRS ODB OHP SDS ASTHMA A CONTACT POP RPDB NRS CPFC ONMARG |

| # | Project Title | ICES Data |
|---|---|---|
| 2 | Adherence to Risk Reduction after Stroke/TIA: The Role of Cognitive Impairment and Mood Symptoms | IPDB PCCF REF INST CCRS DAD HCD NACRS OOB OHP OMHRS HYPER ODD CENSUS RPDB OLIS DOC Utility |
| 3 | Advanced Statistical Methods for Understanding the Impact of a Provincial Program to Screen for Symptoms on Health Service Use | CCRS DAD HCD NACRS NRS OOB OHP OMHRS CENSUS RPDB ALR NDPP OCR ISAAC CIC |
| 3 | Advanced statistical models using information on functional status and symptom burden for predicting mortality among patients with cancer | CPDB LHN PCCF REF AVGP/PRICE ESTSOB DAD HCD NACRS OOB OHP RAICA RAHC ASTHM A CHF COPD HYPER ODD OMD ORAD CENSUS RPDB CAPE ORGD ALR OCR ESAS No official name |
| 5 | Advancing Primary Healthcare for Persons Living with HIV in Canada (The Living with HIV Innovation Team) | ASTHMA CHF COPD HYPER MOMBABY OCCC ODD OMD ORAD DEMENTIA |
| 5 | Adverse respiratory events associated with synthetic oral cannabinoid use among older adults with COPD | IPDB DN PCCF REF DAD HCD NACRS OOB OHP OMHRS SDS CHF COPD HIV HYPER ODD OMD CONTACT RPDB ORGD OCR |
| 7 | Aeroallergens and emergency room visits for cardiovascular disease: effect modification by comorbid health conditions | DAD NACRS OOB OHP ASTHMA RPDB exposure_aeroallergens as7b dat |
| 3 | Aggregate Morbidity of diverting loop ileostomy: from formation to closure | IPDB LHN PCCF REF INST DAD NACRS OHP SDS RPDB OCR CCRS ONMARG |
| 3 | Air pollution and the transition of health states | DAD NACRS OOB OHP SDS ASTHMA CHF COPD HYPER ODD OMD CENSUS CONTACT RPDB NPHS ONMARG ORGD OCR OPHECE CCHS OPHECE |

| # | Project Title | ICES Data |
|---|--|---|
| 8 | Air pollution, medications, and morbidity and mortality | DAD NACRS ODB OHP SDS ASTHMA CHF COPD HYPER ODD OMD CENSUS CONTACT RPDB NPHS ONMARG ORGO OCR OPHECE g9aag OHS OPHECE |
| 8 | Air Quality and Health Outcomes (AQHO) in Ontario: Outreach & Communication of AQHI | INST DAD NACRS OHP SDS ASTHMA CHF COPD HYPER ODD OMD CENSUS POP RPDB ONMARG OCR ORGO dms_aqi |
| 8 | All-cause and cardio-renal-metabolic mortality in people with type 2 diabetes: a comparative international trend study | DIN PCCF REF CORR DAD NACRS ODB OHP SDS HYPER ODD CENSUS CONTACT POP RPDB ETHNIC ORGO |
| 8 | Allocation of hospital-based ambulatory clinic visit costs to patients | DAD NACRS OHP MS |
| 8 | Allocation of physicians to mental health care of children and youth by MCYS service areas | CPDB RPDB DIN REF AVGPRZE CCRS CORR DAD HCD NACRS NRS ODB OHP OMHRS SDS MCMBABY CONTACT RPDB ADP CAPE GAPP OCCI ONCAS OLIS |
| 8 | Alpha-blocker use among community dwelling elderly in Ontario | RPDB DIN PCCF REF DAD NACRS ODB OHP SDS CONTACT RPDB OLIS GDML |
| 8 | An administrative data model for predicting the risk of glaucoma filtration surgery revision based on pre-operative patient risk factors | RPDB DIN LHN PCCF REF INST DAD NACRS ODB OHP SDS ODD CENSUS CONTACT POP RPDB ONMARG ASTHMA CHF COPD HYPER |
| 8 | An assessment of opioid prescribing behaviours in Ontarian family physicians before and after ECHO | RPDB PCCF REF CORR DAD NACRS ODB OHP OMHRS ASTHMA CHF ODD ORAD CENSUS CONTACT RPDB CAPE ONMARG OC |

| # | Project Title | ICES Data |
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| 6 | An assessment of opioid prescribing behaviours in Ontario family physicians before and after ECHO | #PDB #PCCF #REF #DAD #NACRS #OHP #OMHRS #ODD #CENSUS #CONTACT #POP #RPDB #DN #CAPE #RPDB #OLIS #RRS #ECHO clinicians |
| 8 | An evaluation of patient reported outcomes, patterns of symptoms severity, survival and healthcare costs for neuroendocrine tumours (NETs) | #CPDB #PDB #DN #LHN #PCCF #INST #AVGPRCE #ESTSOB #CCRS #CPRO #DAD #HCD #NACRS #NRS #ODB #OHP #OMHRS #RAICA #RAHC #SDS #CENSUS #RPDB #ERCLAM #ONMARG #ALR #NDPP #OCR #ESAS |
| 7 | An evaluation of the effectiveness of initial glaucoma therapies | #PDB #LHN #PCCF #INST #CPRO #DAD #NACRS #OHP #OMHRS #ASTHMA #CHF #COPD #HYPER #ODD #ODM #CENSUS #POP #RPDB #CAPE #ONMARG #CIC #OCR #ORGD #ASTHMA #COPD |
| 7 | An innovative methodological approach for the evaluation of breast cancer diagnostic assessment processes in Ontario | #CPDB #PDB #LHN #PCCF #REF #INST #CCRS #DAD #HCD #NACRS #NRS #ODB #OHP #OMHRS #SDS #CENSUS #CONTACT #CONTACT #RPDB #CAPE #ONMARG #ALR #CIC #NDPP #OBSP #OCR #PHYSNET Ontario Breast Screening Program Breast Assessment Sites |
| 2 | An innovative Trial Assessing Donor Sex on Recipient Mortality (iTADS) | #DN #CCRS #DAD #NACRS #ODB #OHP #CHF #HYPER #ODD #ODM #CONTACT #RPDB Donor Information |
| 3 | An investigation of the Association between Metabolic Screening Analytes and Bilirubin Levels in Ontario Newborns | #DAD #NACRS #OHP #MOMBABY #RPDB #OLIS |

| # | Project Title | ICES Data |
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| 4 | Analyzing the Risk of Motor Vehicle Collisions Following Opioid Therapy Initiation | IPDB LHN PCCF AVCFRICE ESTS06 CCRS CCRR DAD HCD NACRS NRS ODB OHP OMHRS SDS ASTHMA CHF COPD HIV HYPER MCMABY OCOC ODD OMD ORAD CENSUS RPDB ADP CAPE ACG MACRO IPDB ASTHMA CHF COPD HYPER ODD OMD ORAD g9tag |
| 5 | Annual Stroke Report Cards FY2016/17 | LHN PCCF INST CCRS DAD HCD NACRS ODB OHP SDS CENSUS RPDB ONMARG ALR CC OCR ESAS Hospital Resource Survey for Stroke Services - Acute, Rehabilitation, Stroke Prevention Long-term care facilities |
| 6 | Antibiotic and Medication Use Among Children with Asthma in Ontario | IPDB DIN LHN PCCF REF INST DAD NACRS ODB OHP OMHRS ASTHM A CDD CENSUS CONTACT POP RPDB ONMARG ORGD CC SDS OCR Antibiotic Use in Children - DIN List |
| 7 | ANTIBIOTIC CHOICE AND LONG-TERM CAP OUTCOMES | CCRS CPRO DAD HCD HOBIC NACRS NRS ODB OHP CHF HYPER ODD OMD CONTACT RPDB ADP ONMARG ORGD CAP_TCHSAS7BDAT |
| 8 | Antibiotic use in Ontario: A validation analysis of a novel dataset | IPDB DIN ODB OHP RPDB |
| 9 | Anticoagulation for Stroke Prevention in congestive heart failure | Xponent DIN PCCF REF INST DAD NACRS ODB OHP SDS CHF COPD HYPER ODD CENSUS CONTACT RPDB ORGD OCR |

| # | Project Title | ICES Data |
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| 8 | Antidepressants and other drug therapies as replacements for antipsychotics: Assessing medication substitution in Canadian nursing homes | CPDB #PDB DIN LHN PCCF INST CCRS DAD HCD NACRS NRS ODB OHP OMHRS RAHC CHF COPD HYPER ODD OMD CONTACT RPDB DEMENTIA |
| 8 | Anti-hypertensive drugs and risk of keratinocyte carcinoma: Population-based study | CPDB #PDB DIN LHN PCCF REF INST AVGPRICE ESTSOB CCRS DAD HCD NACRS NRS ODB OHP OMHRS SDS CENSUS CONTACT POP RPDB ADP CAPE GAPP OCCI OHAS ONMARG OCR ORGO |
| 2 | Antimicrobial prescribing in older Ontario adults and associated diagnoses | CPDB DIN DAD NACRS ODB OHP SDS POP RPDB |
| 8 | Antipsychotic Deprescribing in Long-Term Care: Unintended Consequences | CPDB #PDB DIN LHN PCCF REF INST CCRS DAD HCD NACRS ODB OHP OMHRS RAICA RAHC CHF HYPER ODD OMD POP RPDB ONMARG OCR |
| 8 | Applying RCT criteria for new cardiovascular therapies in the CANHEART study | CPDB #PDB LHN PCCF ESTSOB DAD NACRS ODB OHP OMHRS SDS CENSUS CONTACT RPDB CAPE ONMARG PCPOP ACG |
| 8 | Approaches to phenotype identification using biomedical text data | CPDB #PDB DIN LHN PCCF REF CCRS CPRO DAD HCD NACRS NRS ODB OHP OMHRS SDS ASTHM A CHF COPD HV HYPER OCCC ODD OMD ORAD CENSUS POP RPDB CAPE CENSUSCA ONMARG POPCAN |

| # | Project Title | ICES Data |
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| 6 | Appropriate Dual Antiplatelet Therapy Prescription for Patients Diagnosed with Acute Coronary Syndrome | IPDB LHN PCCF REF INST DAD NACRS OHP SDS CENSUS CONTACT POP RPDB |
| 7 | Appropriateness of Parenteral B12 Administration in a Real-World Population | IPDB DN PCCF REF INST CCRS DAD NACRS OOB OHP SDS HYPER ODD CENSUS CONTACT RPDB g9999 |
| 8 | Are asthmatic children at higher risk for bone fracture? Exploring the role of inhaled corticosteroid use in Ontario, Canada | IPDB DN INST DAD NACRS OOB OHP SDS ASTHM A ODD POP RPDB ONMARG CC OCR ORGD |
| 8 | Assessing and Addressing Health Disparities Related to Utilization of Preventive Care Services in Ontario | IPDB LHN PCCF REF AVGP/RE ESTS/OS CCRS DAD HCD NACRS NRS OOB OHP OMRS SDS ODD CENSUS CONTACT RPDB ADP CAPE GAPP OCCI OCHAS ONMARG OCR DN ASTHM HIV MOMBABY OCCO ERCLAIM OLS EMR/PC NRS CIC PC/CP CHF COPD HYPER OMD ORAD LOC OTR ORGD CFRD |
| 9 | Assessing obstetrical and neonatal outcomes associated with maternal Tdap administration | IPDB DN LHN PCCF REF CORR DAD NACRS OOB OHP OMRS SDS CENSUS CONTACT POP RPDB OLS |
| 9 | Assessing obstetrical and neonatal outcomes associated with maternal Tdap administration | IPDB DN LHN PCCF REF CORR DAD NACRS OOB OHP SDS ASTHM A CHF COPD HYPER ODD CENSUS CONTACT POP RPDB OLS ETHNIC OCHS CCN CIC GDML OCR ORGD CIC |

| # | Project Title | ICES Data |
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| 1 | Assessing Renal Function during Pregnancy | PCCF REF CRR DAD NACRS OHP SDS MOMBABY RPDB GDM ODD BORN OLIS |
| 2 | Assessing the Provision, Patterns, and Costs of Waiting for Rheumatology Care a step towards optimizing the Care of Rheumatic Diseases | CPDB #PDB DIN LHIN REF INST DAD NACRS ODB OHP OMHRS SDS ASTHM A CHF COPD HYPER OCC ODD OMD ORAD CENSUS CONTACT POP RPDB EMERALD gephys PCPCP PCCF |
| 3 | Assessing the Relationship Between Air Pollution and APGAR Scores in Ontario, Canada | DIN DAD NACRS SDS RPDB OPHECE |
| 4 | Assessment of an evidence practice gap at the population level: Screening for osteoporosis in Ontario | #PDB LHIN DAD NACRS ODB OHP CENSUS RPDB DIN |
| 5 | Assessment of the Impact of the Ontario Fentanyl Patch for Patch Return Program | DIN PCCF REF DAD NACRS ODB OHP RPDB DDARD |
| 6 | Assessment of the variation in the care of stage II Non-Small-Cell Lung Cancer | ALR |
| 7 | Association between Acute Care Hospitalizations and Development of Mental Health Conditions Among Older Adults | #PDB DIN PCCF REF INST AVGPR/E CCRS DAD HCD HOBIC NACRS NRS ODB OHP OMHRS RAICA RAHC SDS CHF COPD HYPER OCC OMD CENSUS CONTACT POP RPDB ADP CAPE GAPP OHCAS ONMARG OCCI ESTSOB |
| 8 | Association between alcohol retail access and alcohol-related harms | DIN LHIN PCCF REF CCRS DAD HCD NACRS ODB OHP OMHRS RAHC SDS ASTHM A CHF COPD HIV HYPER MOMBABY OCCC ODD OMD ORAD ADP GAPP OCCI OHCAS ONMARG <small>Offensive alcohol stores</small> |

| # | Project Title | ICES Data |
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| 11 | Association between allopurinol and renal outcomes in diabetes: a population-based retrospective cohort study | IPDB DIN LHIN PCCF REF CORR DAD NACRS ODB OHP SDS ASTHM A CHF COPD HYPER OCCC ODD OMD ORAD CENSUS CONTACT RPDB OLS ORGD OCR gskkg |
| 12 | Association between denosumab use and outcomes among women diagnosed with breast cancer in Ontario | ESTS DAD NACRS OHP RPDB OCCI ORGD |
| 13 | Association between maternal pertussis vaccination during pregnancy and early childhood health outcomes | IPDB DIN LHIN REF INST CCRS DAD NACRS ODB OHP SDS CHF COPD HIV HYPER ODD CENSUS CONTACT POP RPDB OCR |
| 14 | Association between pre-pregnancy renal function and maternal and fetal outcomes | CPDB IPDB DIN LHIN PCCF REF INST CCRS DAD HCD HOBIC NACRS NRS ODB OHP OMHRS RAICA RAHC SDS ASTHM A CHF COPD HIV HYPER MOMBABY OCCC ODD OMD ORAD CENSUS CONTACT POP RPDB HCES ADP CAPE CENSUSCA EMERALD CCHS OCR PCPOP ODB ORAD |
| 15 | Association between Primary Care Physician Payment Models and Health-related Quality of Life: Evidence from Ontario, Canada | CPDB IPDB DIN LHIN PCCF REF INST CCRS DAD HCD HOBIC NACRS NRS ODB OHP OMHRS RAICA RAHC SDS ASTHM A CHF COPD HIV HYPER MOMBABY OCCC ODD OMD ORAD CENSUS CONTACT POP RPDB HCES ADP CAPE CENSUSCA EMERALD CCHS OCR PCPOP |

| # | Project Title | ICES Data |
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| 16 | Association between schizophrenia and adherence to medications for secondary stroke prevention | #PDB DIN PCCF REF DAD NACRS ODB OHP OMHRS HYPER ODD CENSUS RPDB ORGD OSR |
| 17 | Association between the availability of registered respiratory therapists and healthcare utilization of people with COPD | #PDB LHN CCRS DAD HCD NACRS NRS ODB OHP OMHRS SDS ASTHMA CHF COPD HYPER ODD RRT |
| 17 | Association between the built environment and incident cardiovascular disease | #PDB DIN LHN PCCF REF DAD NACRS ODB OHP SDS ASTHMA ACHF COPD HYPER ODD OMD CENSUS CONTACT POP RPDB CCHS CIC ETHNIC ORGD WALKABILITY GDM EMERALD OPHECE OPHECW OLS OMHRS Food_Environment(DB10min_allfood_mast er) Canadian_ActiveLiving_Environments_(Can-ALE)_National_MDDIS_NDV1_Postal_Code |
| 18 | Association between the use of fall-risk-increasing drugs and fall-related injuries among older adults | #PDB DIN LHN PCCF REF INST CCRS DAD NACRS ODB OHP RAHIC SDS CENSUS CONTACT POP RPDB ONMARG CPDB HCD OMHRS CHF COPD HYPER ODD OMD ORAD DEMENTA OCR ORRS |
| 18 | Association of air pollution with incidence and persistence of asthma and allergy: Follow-up of the T-CHEQ Study | DAD NACRS OHP SDS ASTHMA CENSUS RPDB ONMARG ORGD AHQI TCHEQ @phec OPHECE MOMBABY DIN ODB OD D OLI S PIB D PMS_composition_2000_2016 PMS_composition_2000_2016 tcheq_exposures_2017-07-12 tcheqfinal CANUE_Greenness_Dataset |

| # | Project Title | ICES Data |
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| 10 | Association of attending physician with variation in receipt of palliative care in hospitalized adults | CPDB #PDB DN LHN PCCF REF NST AVGP/ICE CCRS CORR CPRO DAD HCD HOBIC NACRS NRS ODB OHP OMHRS RAICA RAHC SDS ASTHMA CHF COPD HIV HYPER MOMBABY ODD OMD ORAD CENSUS CONTACT POP RPDB CAPE ONMARG ETHNIC |
| 11 | Association of Known or Strongly Suspected Malignant Hypothermia on Perioperative Morbidity and Mortality | CPDB #PDB DN LHN PCCF NST DAD NACRS ODB OHP SDS ASTHMA A CHF COPD HYPER ODD OMD CENSUS POP RPDB |
| 12 | Association of newborn screening analytes with type of delivery among preterm and term births | BORN NSO DAD MOMBABY RPDB NSO SDS |
| 13 | Associations between newborn screening analytes and autism spectrum disorders | #PDB LHN PCCF REF DAD OHP ASTHMA ODD RPDB EMERALD |
| 14 | Abpic and infectious disease outcomes in children of mothers who received influenza vaccination during pregnancy | PCCF DAD NACRS OHP ASTHMA CENSUS RPDB BORN |
| 15 | Abpic Dermatis: Exploring Prevalence and Disparities (ADEPD) | DAD NACRS ODB OHP OMHRS ASTHMA CHF COPD HIV HYPER MOMBABY ODD OMD ORAD RPDB ORGD |
| 16 | Atrial fibrillation after early stage breast cancer (BC) | #PDB DN PCCF REF DAD NACRS ODB OHP SDS CHF COPD HYPER ODD OMD CENSUS RPDB AIR NDIP OBSP OCR ORGD |
| 17 | Atrial fibrillation associated events in acute kidney injury | SDS OLIS |

| # | Project Title | ICES Data |
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| 18 | Atrial Fibrillation in the Emergency Room (The AFTER Study): Prospective Validation of the Clinical Decision Instruments | IPDB DIN LHIN PCCF INST DAD NACRS ODB OHP ASTHM A CHF COPD HYPER ODD OMD CENSUS POP RPDB CAPE OLS AFTER Validation |
| 19 | Atrial fibrillation, bleeding, HF, MI, stroke and sudden death risk associated with ibrutinib for chronic lymphocytic leukemia treatment | IPDB DIN LHIN PCCF REF INST DAD NACRS ODB OHP SDS CHF COPD HYPER ODD OMD CENSUS CONTACT RPDB DEMENTIA ORGD ALR NDPP OCR OLS |
| 20 | Atrial Fibrillation, Stroke, Dementia & Death in Ontario | DAD NACRS OHP ASTHMA CHF COPD HYPER ODD OMD CENSUS RPDB CAPE ONMARG TRANSFORMATION RPDB |
| 21 | Attachment, Access, Continuity and Mental Health Gaps in Care | IPDB LHIN PCCF DAD NACRS ODB OHP OMHRS SDS ASTHMA CHF COPD HIV HYPER MOMBABY ODD CENSUS CONTACT POP RPDB HCES CAPE GAPP CIC OBSP OCR PHYSNET CHC PCCF CBI NMS Toronto_Neighbourhood_cr_osswalk AVGP/ICE ESTSDB CCRS HCD NRS ADP OCCI OHCAS PCPOP NMS ODB OLS |
| 22 | Attending Nurse Practitioners in Long-Term Care Homes Evaluation | CPDB IPDB LHIN PCCF AVGP/ICE CCRS DAD HCD NACRS NRS ODB OHP OMHRS SDS CONTACT RPDB ADP CAPE GAPP OHCAS OCCI LTC homes with NPs |
| 23 | Automated methods for identifying incident C difficile infections | OLS COMBATAMR Cdiff |

| # | Project Title | ICES Data |
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| 15 | Automatic understanding of unstructured clinical data | CPDB IPDB DIN LHN PCCF REF INST CCRS DAD HCD HOBIC NACRS NRS ODB OHP OMHRS RAICA RAHC SDS ASTHM A CHF COPD HIV HYPHER MOMBABY OCCC ODD OMD ORAD CENSUS CONTACT POP RPDB HCES ADP CAPE CENSUSCA EMERALD CCHS OCR PCPOP |
| 16 | Average risk colonoscopy in Ontario: Understanding risks and subsequent follow-up after a complete negative colonoscopy | IPDB DAD NACRS OHP CENSUS RPDB CAPE ONMARG OCR %9899 OCCC ORGO CIC |
| 17 | Baseline assessment of health status of persons in provincial correctional facilities in Ontario | DIN LHN PCCF INST DAD NACRS ODB OHP OMHRS SDS ASTHM A CHF COPD HIV HYPHER MOMBABY OCCC ODD OMD ORAD RPDB ORGO CHC |
| 18 | Basketball, soccer and hockey related injuries between 2006 and 2015 in Ontario, Canada | AVGPRIE CAPE ESTSOB |
| 19 | Basketball, soccer and hockey related injuries between 2006 and 2015 in Ontario, Canada | CPDB IPDB LHN PCCF REF INST DAD NACRS OHP SDS ASTHM CENSUS CONTACT RPDB ONMARG CCHS AVGPRIE CAPE ESTSOB |
| 20 | Behavioural phenotyping: Characterizing habitual adherers and non-adherers | IPDB DIN PCCF REF INST CCRS DAD NACRS ODB OHP SDS CHF COPD HYPHER ODD CENSUS CONTACT POP RPDB SESAM |

| # | Project Title | ICES Data |
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| 12 | Behavioural Supports Ontario | LHN INST CCRS CPRO DAD HCD NACRS ODB OHP RAHC RPDB 1 Alzheimer Society of Simia Lambton BSO Registry 2 Alzheimer Society of Windsor Essex BSO Registry 3 Alzheimer Society of Chatham-Kent BSO Registry 4 GAIN Lakeside BSO Registry 5 GAIN Scarborough Rouge Valley BSO Registry 6 Riverlea Manor BSO Registry 7 Yee Hong Finch BSO Registry 8 Fairhaven BSO Registry 9 Seneca Oaks BSO Registry 10 Waypoint Centre for Mental Health Care BSO Registry 11 North Bay Regional Health Centre BSO Registry 12 Pioneer Manor BSO Registry 13 Algonquin Nursing Home BSO Registry 14 Eldercare Timmins BSO Registry 15 Eldercare Van Dale BSO Registry 16 CMHA WW BSO Registry BSO Registry |
| 13 | Benefits, harms, and unintended negative consequences of colorectal cancer screening | DIN PCCF ESTSOB DAD HCD NACRS ODB OHP RAICA RAHC SDS RPDB CCN OCCO CONTACT getag DIN REF CORR ODB OMHRS CHF COPD HIPER OCCO ODD OMD CONTACT CAPE DEMENTIA ColorCanceCheck Colonoscopy Interim Reporting Tool |
| 14 | Beta blocker use in hemodialysis centres | IPDB DIN LHN PCCF REF INST CORR DAD NACRS ODB OHP SDS CENSUS CONTACT POP RPDB ORRS |
| 15 | Bicyclist and Pedestrian Injuries in Ontario | LHN PCCF REF DAD NACRS OHP CENSUS CONTACT POP RPDB OTR ORGD |
| 16 | Bilateral Prophylactic Mastectomy in Ontario: Trends and Outcomes | CPDB IPDB DIN PCCF AVGP/ICE ESTSOB CCRS DAD HCD NACRS NRS ODB OHP OMHRS RAHC SDS ASTHMA CHF COPD HIPER OCCO ODD OMD ORAD CENSUS CONTACT RPDB ADP CAPE GAPP OCCO OHCAS ONMARG health links |

| # | Project Title | ICES Data |
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| 13 | Biliary Atresia Incidence and Newborn Screening in Ontario | IPDB LHN PCCF REF AVGP/RE ESTS/OB CCRS DAD HCD NACRS NRS ODB OHP OMHRS SDS MOMBABY CENSUS CONTACT RPDB CAPE GAPP OUS |
| 13 | BORN Healthy Weights Surveillance System Stratified Random Sampling for Physician EMR Enrollment | CPDB IPDB LHN PCCF OHP CONTACT RPDB CAPE CPSO number |
| 13 | BORN-ICESData Working Group | LHN PCCF INST DAD NACRS ODB OHP OMHRS SDS ASTHMA HY HYPER MOMBABY ODD CENSUS CONTACT RPDB NIS BORN CCHS |
| 13 | Breast cancer risk among women using denosumab | DIN LHN PCCF REF DAD NACRS ODB OHP SDS CONTACT RPDB OCR |
| 13 | BRIDGES- Innovate Atrial Fibrillation: Transitioning Emergency Atrial Fibrillation Management (Innovate AF-TEAM) | CPDB IPDB DIN LHN REF CCRR CORR DAD NACRS ODB OHP OMHRS SDS HYPER RPDB OCR BRIDGES_Innovate |
| 13 | BRIDGES- Rapid Assessment for Psychopharmacologic Treatment (RAPT) | BRIDGES-RAPT |
| 13 | Bridging the gap to optimize care and outcomes for youth with diabetes between pediatric and adult care | IPDB PCCF REF DAD NACRS OHP OMHRS ODD CENSUS CONTACT POP RPDB IPDB ADP OUS Diabetes transition project |
| 13 | Bronchiolitis Hospital Care in Ontario, 2002 to 2018 | IPDB LHN PCCF REF INST AVGP/RE ESTS/OB CCRS DAD HCD NACRS NRS ODB OHP OMHRS SDS MOMBABY CENSUS CONTACT RPDB ADP CAPE GAPP OCCJ OHCAS ONMARG AQH NDVI (CANUE greeness index) |

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| 16 | B-type Natriuretic Peptide (BNP) Testing in the Acute Heart Failure Setting: Geographic Variations and Prognostic Implications | LHIN REF DAD NACRS OHP RPDB OLIS COACH <small>trial</small> |
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| # | Project Title | ICES Data |
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| 11 | Building a Better Understanding of Belonging and Mental Health/Addictions of people whose Ontario Community Health Centres | PCCF REF DAD NACRS OHP RPDB ALR NDPF OCR ESAS MOMBABY CONTACT RPDB OCC1 ONMARG BORN |
| 12 | Building a clinical prediction rule and population monitoring rule for respiratory morbidity in young children | PDB DIN LHN PCCF INST DAD NACRS ODB OHP OMHRS SDS AST HYPER MOMBABY ODD OMD CENSUS CONTACT POP RPDB ONMARG OCR ORGD #3a, #3h Canadian Healthy Infant Longitudinal Development (CHILD) birth cohort |
| 13 | Building and generalizing institution-specific predictive models across Ontario health care providers | CPDB PDB DIN LHN PCCF REF INST CCRS DAD HCD HOBIC NACRS NRS ODB OHP OMHRS RAICA RAHC SDS ASTHM ACHF COPD HIV HYPER MOMBABY OCC1 ODD OMD ORAD CENSUS CONTACT POP RPDB HCES ADP CAPE CENSUSCA EMERALD CCHS OCR PCPOP |
| 14 | Burden of alcohol use disorders in the emergency department | LHN PCCF AVGP/ICE CCRS DAD HCD NACRS NRS OHP OMHRS SDS CONTACT RPDB ONMARG ORGD |
| 15 | Burden of varicella and herpes zoster viruses in Ontario | PDB DIN LHN PCCF REF AVGP/ICE ESTS/OB CCRS DAD HCD NACRS NRS ODB OHP OMHRS SDS ASTHMA CHF COPD ODD OMD POP RPDB POP ONMARG ALR NDPF |

| # | Project Title | ICES Data |
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| 18 | Burden, cost and development of asthma related to severe RSV infections | DIN PCCF REF AVGPRICE ESTSOB CCRS CORR DAD HCD NACRS NRS ODB OHP OMRS SDS ASTHMA HV MOMBABY CENSUS POP RPDB ADP CAPE GAPP OCCI OHCAS FOREVER Cchr BCR N NSO |
| 19 | CAHO Member Hospital Usage HeatMap | DAD NACRS ODB OHP SDS ASTHMA CHF CPD HYPER ODD OMD CENSUS CONTACT RPDB OMMARG OPHECE |
| 20 | Can early palliative care for non-small cell lung cancer improve end-of-life outcomes and reduce cost in the real world? A population-based study | DIN LHIN PCCF REF INST AVGPRICE CCRS CPRO DAD HCD NACRS NRS ODB OHP OMRS SDS CENSUS POP RPDB ADP CAPE GAPP OCCI OHCAS |
| 21 | Can primary care prevent adverse outcomes in older adults with intellectual and developmental disabilities? | LHIN PCCF REF CCRS DAD NACRS OHP OMRS SDS CENSUS RPDB CAPE health_demos dev_dis65_demos aging_newsources |
| 22 | Canadian Gastro-Intestinal Epidemiology Consortium (CanGEC) | IPDB LHIN PCCF INST AVGPRICE STDPRICE DAD NACRS ODB OHP OMRS SDS MOMBABY OCC CENSUS CONTACT POP RPDB |
| 23 | Cancer Incidence, Screening, Treatment Patterns and Outcomes in Chronic Kidney Disease, Phase I | IPDB DIN LHIN PCCF REF CORR DAD NACRS ODB OHP SDS HYPER ODD CONTACT RPDB OLS OCR ORGO CPDB INST CCRS HCD NRS OMRS RADIA RAHC CENSUS ALR NDIP |

| # | Project Title | ICES Data |
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| ☒ | Cancer risk and screening among immigrants in Ontario | PCCF DAD OHP CENSUS RPDB OC OBSP OCR |
| ☒ | Cancer Screening and Mortality among Patients across the Spectrum of Kidney Disease | EMRALD OQB HYPER ODD |
| ☒ | Cancer screening rates (breast, colorectal, cervical) for Central LHN region (Update 2016) | PCCF DAD NACRS OHP SDS RPDB OBSP OCR |
| ☒ | Cancer screening rates (breast, colorectal, cervical) for Central LHN region (Update 2017) | DN CAPE |
| ☒ | Cancer screening rates (breast, colorectal, cervical) for Central LHN region (Update 2018) | PCCF DAD NACRS OHP SDS RPDB OBSP OCR |
| ☒ | CanEPIC Study - Canadian Environment, Pregnancy, Infant and Child Study | PCCF DAD NACRS ASTHMA MOMBABY ODD CENSUS CONTACT RPDB ONMARG BORN Environmental_factors |
| ☒ | CANHEART Lipids substudy – association of lipid blood values with CVD | IPDB DN REF INST DAD NACRS OQB OHP SDS ASTHMA CHF COPD HYPER ODD CENSUS CONTACT RPDB OIS ORGO CCHS |
| ☒ | Capacity Planning for a Healthcare Network: Optimizing care across settings | CPDB IPDB DN LHN PCCF REF INST AVGPRICE ESTS OQB CCRS CORR DAD HCD NACRS NRS OHP RAICA RAIHC SDS ASTHMA CHF COPD HV HYPER MOMBABY OCCC ODD OMD ORAD CENSUS CONTACT POP RPDB HCEB ADP CAPE OCCI OHCAS DEMENTIA ORGO DADQ |
| ☒ | Cardiac monitoring in HER2 positive breast cancer: life-saving prevention or hindrance to cancer care? | IPDB AVGPRICE STDPRI E CCRS DAD HCD NACRS NRS OQB OHP OMHRS SDS CHF ODD OMD RPDB ADP CAPE GAPP HCDMOM OHCAS OCCI NDPP OCR ESTS ORGO ALR |

| # | Project Title | ICES Data |
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| | Cardiologist billing patterns and their association with health care utilization and quality of cardiovascular care | IPDB DIN PCCF REF DAD NACRS ODB OHP SDS COPD HYPER ODD RPDB CCN |
| 16 | Cardiovascular and non-cardiovascular outcomes in patients with and without type II diabetes admitted for MI, HF, and PAD | DIN LHIN PCCF REF INST DAD NACRS ODB OHP SDS CHF COPD HYPER ODD CENSUS CONTACT RPDB OLS CCN CORR |
| 17 | Cardiovascular Complications of Young-Onset Type 2 Diabetes in Chinese, South Asian, and Other Canadians | DAD OHP ODD CENSUS RPDB ONMARG ETHNIC OC PCCF SDS HYPER PCPOP |
| 18 | Cardiovascular risk factors and events in adults with chronic obstructive pulmonary disease: the CANBREATH/CANHEART study | CPDB IPDB DIN LHIN PCCF REF INST AVGP/RC CCRS CORR DAD NACRS ODB OHP OMHRS SDS ASTHMA CHF COPD HYPER ODD OMD CENSUS CONTACT POP RPDB ADP CAPE OLS EMERALD ETHNIC CCHS CIC OCR ORGD |
| 19 | Cardiovascular risk factors in the Iranian population of Ontario | DIN PCCF DAD ODB OHP SDS HYPER ODD RPDB CIC ORGD |
| 20 | Care of acute cardiac events in schizophrenia | DAD NACRS OHP OMHRS SDS OMD RPDB |
| 21 | CATCH-Homeless: The effectiveness of a brief intervention on improving health outcomes for homeless people with unmet health needs | IPDB PCCF AVGP/RC STDPRIC E CCRS DAD HCD NACRS NRS ODB OHP OMHRS SDS CENSUS RPDB CAPE GAPP OHCAS OCCI Catch-Homeless |
| 22 | Categorizing Referral Notes | OHP EMERALD |

| # | Project Title | ICES Data |
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| 12 | Cause of death by stage at diagnosis in women diagnosed with early stage breast cancer: A population-based study | IPDB DIN LHM PCCF REF INST DAD NACRS ODB OHP SDS CHF COPD HYPHER ODD OMD CENSUS POP RPDB OCR ORGO |
| 13 | CCDSS dementia prevalence estimates for Ontario | DIN REF DAD ODB OHI P CENSUS POP RPDB |
| 14 | CCN Cardiac Surgery Gap Report | IPDB DIN LHM REF INST DAD NACRS ODB OHP SDS ASTHM A CHF COPD HYPHER ODD CENSUS CONTACT RPDB CCN |
| 15 | CCN Outcomes TAVI Report | IPDB DIN LHM REF DAD NACRS NRS ODB OHP OMHRS SDS RPDB CCN |
| 16 | CCN Percutaneous Coronary Intervention Gap Report | IPDB DIN LHM REF INST DAD NACRS ODB OHP SDS CHF COPD HYPHER ODD CENSUS CONTACT RPDB CCN |
| 17 | CCS National TAVI Quality Indicators Report | DIN LHM REF DAD NACRS NRS ODB OHP OMHRS SDS RPDB CCN Libin Cardiovascular Institute of Alberta/Foothills Medical Centre - Approach Database University of Alberta Hospital TAVI local database Cadiac Services BC TAVI Registry St Boniface General Hospital (Manitoba) local TAVI database New Brunswick Heart Centre local TAVI Database Nova Scotia's QE II Health Sciences Centre TAVI Data INESSS (Institut national d'excellence en santé et en services sociaux) (Quebec) TAVI data Regina General Hospital TAVI local database Cadiac Services BC TAVI Registry (partial) Health Sciences Centre (Newfoundland) local TAVI database Nova Scotia's QE II Health Sciences Centre TAVI Data Cadiac Services BC TAVI Registry (partial) |

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| <p>18</p> | <p>Central nervous systemside effects of overactive bladder medications</p> | <p>CPDB IPDB DIN LHN PCCF REF INST DAD NACRS ODB OHP OMRS SDS HYPER ODD CENSUS CONTACT POP RPDB</p> |
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| # | Project Title | ICES Data |
|----|---|---|
| 1 | Cerebral Laterality of Ischemia and Potential Perilous Events in Drivers (CLPEED) | PCCF DAD NACRS CENSUS RPDB RCSN PCCF OHP |
| 2 | Changes in hospitalizations prior to versus after TAMI | DAD NACRS OHP OMHRS MOMBABY BORN NSO |
| 3 | Changes in Lab Test Ordering Rates for Diagnosing Diabetes in Ontario, Canada - An Interrupted Time Series from 2005 to 2015 | CPDB DN LHN OHP ODD RPDB CAPE IPDB IFDB AVGPRICE STDPRICE E IPDB |
| 4 | Changing patterns of synthetic cannabinoid use among older Ontarians | IPDB DN PCCF REF INST CCRS DAD NACRS ODB OHP OMHRS RAICA RAIC SDS CENSUS RPDB AIR NDPP |
| 5 | Characterising the risk of major bleeding in patients with non-valvular atrial fibrillation: Non-interventional study of patients taking DOAC | CPDB IPDB DN PCCF REF DAD NACRS ODB OHP SDS ASTRAM ACHF COPD HIV HYPER OCC ODD OMD ORAD CENSUS CONTACT RPDB ONMARG OCR |
| 6 | Characteristics and Practice Patterns of Ontario Geriatric Psychiatrists | IPDB LHN PCCF DAD NACRS OHP OMHRS RPDB |
| 7 | Characteristics of Ontario Residents cared for by Nurse Practitioners | CPDB IPDB LHN PCCF REF INST DAD NACRS ODB OHP SDS CONTACT RPDB CAPE |
| 8 | Characteristics of those with moderate to severe TBI discharged to rehab (Update 2016) | PCCF INST DAD HCD NACRS NRS OHP OMHRS RPDB |
| 9 | Characteristics of those with moderate to severe TBI discharged to rehab: Part 2 (additional analyses) | PCCF INST DAD HCD NACRS NRS OHP OMHRS RPDB Colour dataset from previous project |
| 10 | Characteristics of Youth who Died by Suicide in Ontario | DAD NACRS OHP ODD RPDB OCR |

| # | Project Title | ICES Data |
|---|---|---|
| 1 | Characterization of Endometriosis Surgery Patterns in Ontario | CPDB IFDB LHN PCCF REF INST AVGPRICE ESTSOB DAD NACRS ODB OHP SDS MCMBABY CENSUS CONTACT POP RPDB ONMARG OCR |
| 2 | Characterization of Ionization Radiation and Cumulative Exposure in IBD (CIRCLE-IBD) | IFDB LHN PCCF DAD OHP OCC ERCLAM |
| 3 | Characterization of surgical outcomes in intravenous drug users with infective endocarditis | AVGPRICE STDPRICE CAPE ERCLAM GAPP OCCI ESTSOB |
| 4 | Characterizing care transitions for complex populations using person-centred episodes of care | CPDB IFDB DIN LHN PCCF REF INST AVGPRICE CCRS CPRO DAD HCD NACRS NRS ODB OHP OMHRS RAHC SDS ORAD CENSUS CONTACT POP RPDB CAPE ONMARG POPCAN ESTSOB HOBIC RAICA ADP GAPP OHCAS OCCI |
| 5 | Characterizing fragility and traumatic upper extremity fractures in Ontario | CPDB IFDB DIN LHN PCCF REF INST AVGPRICE ESTSOB CCRS DAD HCD NACRS NRS ODB OHP OMHRS RAICA RAHC SDS ASTHMA CHF COPD ODD OMD CENSUS CONTACT POP RPDB ADP HCDMOH OCCI OHCAS ONMARG ORGD ESAS |
| 6 | Characterizing health care utilization in Northern Ontario (Update 2018) | IFDB DAD NACRS OHP SDS RPDB ORGD |

| # | Project Title | ICES Data |
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| 18 | Characterizing Population-Level Trajectories in Healthy and Chronic Co-Morbid Populations | CPDB #PDB DN LHN PCCF REF CCRS DAD HCD HOBIC NACRS NRS ODB OHP OMHRS RAICA RAHC SDS ASTHM ACHF COPD HIV HYPER MCMBABy OCCC ODD OMD ORAD CENSUS CONTACT POP RPDB HCES OLS EMERALD Word Embeddings: 1 Building the graph of medicine from millions of clinical narratives Co-occurrence statistics for medical terms extracted from 14 million clinical notes and 200,000 patients Paper 2 Learning Low-Dimensional Representations of Medical Concept Low-dimensional embeddings of medical concepts constructed using claims data Note that this paper utilizes data from Building the graph of medicine from millions of clinical |
| 19 | Characterizing primary care use during active breast cancer treatment and wait times to receiving chemotherapy | CPDB #PDB DAD NACRS ODB OHP SDS RPDB CAPE CENSUS/CA ALR CIC NDPP DESP OCR DN REF CCRS HCD NRS OMHRS LOC CarIMPACT |
| 20 | Characterizing Renal and Cardiovascular Outcomes in Overt and Subclinical Aldosterone Excess | #PDB DN PCCF REF CCRS DAD NACRS ODB OHP SDS CHF HYPER ODD CONTACT RPDB OLS ORGD |
| 21 | Characterizing uses of health care in Oxford County by health care expenditure categories | LHN PCCF REF AVGP/ICE CCRS DAD HCD NACRS NRS ODB OHP OMHRS SDS ASTHMA CHF COPD HYPER ODD OMD CENSUS POP RPDB ADP CAPE GAPP ONMARG CCHS OCCJ OCR CONTACT |
| 22 | CHC- Feasibility Study to Inform Retinopathy Screening Project | DAD ODB OHP ODD RPDB CHC CAPE NACRS |
| 23 | CHC-ICES Data Working Group | CPDB #PDB LHN PCCF REF DAD NACRS ODB OHP OMHRS CENSUS CONTACT RPDB ONMARG CHC |

| # | Project Title | ICES Data |
|----|---|---|
| 21 | Child health in Northwestern Health Unit | LHN DAD NACRS OHP OMHRS SDS ASTHMA MOMBABY RPDB |
| 22 | Childbirth after bariatric surgery in Ontario | IFDB DAD NACRS OHP MOMBABY CENSUS RPDB |
| 23 | Childhood intussusception: a population based study in Ontario | PCCF REF NST DAD NACRS SDS CENSUS POP RPDB MS OCCI ORGD |
| 24 | Chlamydia testing rates in public health STI clinics | OHP CENSUS POP RPDB |
| 25 | Choosing Wisely Canada: Prescribing in Primary Care | CPDB IFDB DN LHN PCCF REF NST CCRS DAD HCD NACRS ODB OHP OMHRS RAICA RAHC SDS ASTHM A CHF COPD HYPER ODD CENSUS RPDB CAPE |
| 26 | Choosing Wisely Canada: Primary care physicians core card | CPDB IFDB LHN PCCF DAD HCD NACRS ODB OHP SDS ASTHMA CHF COPD HIV HYPER ODD RPDB CAPE OCR |
| 27 | Choosing Wisely International: Comparing use of low-value services between Ontario and Michigan | CPDB IFDB DN LHN PCCF REF DAD HCD NACRS ODB OHP SDS ASTHM A CHF COPD HIV HYPER ODD RPDB CAPE |
| 28 | Choosing Wisely: Describing Anti-Psychotic Medication Use in Ontario | CPDB IFDB LHN DAD NACRS ODB OHP OMHRS CENSUS RPDB CAPE |

| # | Project Title | ICES Data |
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| 25 | Chronic Disease and Organizational Attributes | CPDB #PDB DAD PCCF AVGPRICE ESTS0B DAD NACRS ODB OHP OMHRS ASTHMA CHF COPD HYPER ODD OMD ORAD CENSUS CONTACT RPDB CAPE DEMENTIA CIC OCR getkg Organizational Survey |
| 26 | Chronic Disease Development and Multimorbidity among Immigrants in Ontario | CPDB #PDB PCCF DAD NACRS OHP ASTHMA A CHF COPD HYPER OCC ODD OMD ORAD CENSUS RPDB CAPE CCHS CIC OCR |
| 27 | Chronic disease in the Havelock-Belmont-Methuen Township | PCCF DAD NACRS OHP SDS ASTHMA CHF COPD HYPER ODD OMD CENSUS CONTACT RPDB |
| 22 | Chronic Disease Prevalence, Health Care, and Health Behavioural Community Profiles in Thunder Bay District | #PDB PCCF REF DAD OHP OMHRS ASTHMA A COPD HYPER ODD CENSUS CONTACT POP RPDB CCHS OCR NMS |
| 23 | Chronic Kidney Disease Prognosis Consortium | OLIS |
| 24 | Chronic Medical Conditions and Perinatal Mental Illness | #PDB DAD NACRS OHP OMHRS SDS ASTHMA CHF HIV HYPER MOMBABY OCC ODD OMD CENSUS RPDB CIC OCR PCCF COPD ORAD CONTACT CAPE ADP OLIS ONMARG |
| 25 | Chronic medical conditions and perinatal mental illness: Evaluating the role of neighbourhood income quintile | #PDB PCCF DAD NACRS OHP OMHRS SDS ASTHMA CHF COPD HIV HYPER MOMBABY OCCC ODD OMD ORAD CENSUS CONTACT RPDB ADP CAPE OLIS CIC OCR ONMARG |

| # | Project Title | ICES Data |
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| 26 | Chronic medical conditions and perinatal mental illness: Exploring the modifying role of immigrant status | #PDB PCCF DAD NACRS OHP OHRS SDS ASTHMA CHF COPD HYPER MOMBABY OCCO ODD OMD ORAD CENSUS CONTACT RPDB ADP CAPE OUS CIC OCR |
| 27 | Chronic Total Occlusion Canadian Registry | DN PCCF REF DAD NACRS ODB OHP SDS CHF COPD HYPER ODD RPDB CCN OMD CONTACT CCRS HCD Sunnybrook CTO Registry Data St Michael's Hospital CTO Registry Data |
| 28 | Classifying And Describing Retirement Home Residents In Ontario: Creating The First Population-Level Retirement Home Cohort | CPDB #PDB DN LHN PCCF REF CCRS DAD HCD NACRS NRS ODB OHP OHRS RAICA RAHC SDS ASTHM A CHF COPD HYPER ODD OMD ORAD CENSUS CONTACT RPDB CAPE ONMARG DEMENTIA INST AVGP/ICE ESTSOB ADP NDP |
| 29 | CLEAN Meds | Licensed homes and historical licenses HC D OD B SDS |
| 30 | Clinical impact and cost-effectiveness of an interstitial lung disease Nurse on patients with idiopathic pulmonary fibrosis | #PDB DN AVGP/ICE ESTSOB CCRS DAD HCD NACRS ODB OHP RAICA RAHC SDS RPDB NRS OHRS ADP CAPE GAPP OCCO OHCAS OCR ED nurse research |
| 31 | Clinical impact of respiratory syncytial virus and human metapneumovirus in hospitalized adults | LHN DAD NACRS ODB OHP OHRS MOMBABY CENSUS RPDB ONMARG CIC EDI |

| # | Project Title | ICES Data |
|----|---|---|
| 22 | Clinical Outcomes and Costs following Bariatric Surgery: An Analysis of the Ontario Bariatric Registry Linked to Administrative Databases | CPDB #PDB DN LHN PCCF REF DAD HCD NACRS NRS OOB OHP OMHRS SDS ASTHM A CHF COPD HYPER OCCO ODD OMD ORAD CENSUS CONTACT RPDB BRTRC OCR ORGD CHS EMERALD AVGP/PRICE ESTS/OB |
| 23 | Clinical outcomes associated with electroconvulsive therapy using population-level data | PCPOP |
| 24 | Clinical outcomes of failing to dose-reduce alogopinol in chronic kidney disease: A population-based cohort study | #PDB DN LHN PCCF REF CORR DAD NACRS OOB OHP OMHRS SDS CENSUS CONTACT POP RPDB OLS |
| 25 | Clinical outcomes of failing to dose-reduce oral Baclofen in chronic kidney disease: A population-based cohort study | DN PCCF INST CCES DAD NACRS OOB OHP RPDB OLS |
| 26 | Clinical outcomes of failing to dose-reduce oral DPP4 inhibitors in chronic kidney disease: A population-based cohort study | DAD NACRS OOB OHP OMHRS SDS ASTHMA CHF COPD HIV HYPER MCEBABY ODD CENSUS RPDB MCSCS ORGD |
| 27 | Clinical predictors for peri-procedural stroke during TAVI: External validation of the TASK score | DN REF DAD NACRS OOB OHP SDS CHF COPD HYPER ODD RPDB DEMENTIA CCN |
| 28 | Clostridium difficile colonization in Ontario (COLON): Acute Care Hospital Pilot Feasibility Study | INST CCES HCD HOBIC OOB SDS |
| 29 | Clostridium Difficile Infection in Solid Organ Transplant Recipients | CPDB #PDB DN LHN PCCF REF INST CORR DAD NACRS OOB OHP SDS CHF COPD HYPER OCCO ODD ORAD CENSUS CONTACT RPDB OLS ONMARG ORGD |

| # | Project Title | ICES Data |
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| 25 | Cluster randomized controlled trial of an early palliative care team intervention for patients with advanced cancer effects on economic cost | CPRO DAD HCD NACRS ODB OHP SDS CONTACT RPDB ERCLAIM HCDMOH ALR NDPP OCR ORGO CCRS OMHRS ADP Zimmerman_Palliative RCT |
| 26 | Cluster randomized trial of home sleep testing in Ontario | REF CORR DAD OHP SDS RPDB Acute Kidney Injury Registry |
| 27 | CNODESCDM Pilot Study 2: Gastrointestinal and intracerebral hemorrhage following new use of OAC among patients with atrial fibrillation | DIN LHIN PCCF INST DAD NACRS ODB OHP OMHRS SDS ASTHM A CHF COPD HIV HYPER MOMBABY OCCC ODD OMD ORAD RPDB CHC |
| 28 | CNODESCDM Pilot Study 3: Rhabdomyolysis and AKI events following new use of statins | DIN LHIN PCCF INST CCRS DAD NACRS OHP CENSUS RPDB OLIS |
| 29 | CNODES Common Data Model Pilot Project | CPDB JPDB PCCF REF INST DAD NACRS ODB OHP OMHRS SDS CENSUS CONTACT RPDB |
| 30 | CNODES Common Data Model Pilot Study 1: Incidence and prevalence of use of New Molecular Entities (NME) approved by Health Canada in 2015 | PCCF REF INST DAD OHP SDS CHF CONTACT RPDB |
| 31 | Coached, Coordinated, Enhanced Neonatal Transition (CCENT): A multi-centre mixed-methods pragmatic randomized controlled trial | CPDB JPDB DIN LHIN PCCF INST CCRS DAD HCD NACRS NRS ODB OHP OMHRS SDS ASTHM A COPD CENSUS POP RPDB OLIS ONMARG POP CAN CCent CCENT |
| 32 | Collaborative New York State and Ontario TAVR Evaluation | CCRS HCD NRS OMHRS ADP |
| 33 | Colorectal Cancer Diagnostic Pathways: How do they vary and are those variations associated with the diagnostic interval length? | JPDB PCCF REF DAD NACRS OHP SDS CONTACT RPDB ONMARG ALR OCR PHYSNET |

| # | Project Title | ICES Data |
|----|---|---|
| 25 | Combining Machine Learning and Causal Inference Methods for Analyzing the Effect of Treatment Options on Survival Odds | #PDB #DN #LHN #PCCF #REF #INST #AVGPRICE #STDPRICE #ECCRS #DAD #HCD #NACRS #NRS #ODB #OHP #OMHRS #RAICA #RAHC #SDS #CENSUS #CONTACT #POP #RPDB #ADP #CAPE #GAPP #OHCAS #OCCI #ALR #NDFP #OCR #ORGO |
| 26 | COMMON: Complications, Outcomes, Morbidity, and Mortality of Ontario Hip Fractures | #CPDB #PDB #DN #LHN #PCCF #REF #INST #CCRS #CPRD #DAD #HCD #NACRS #NRS #ODB #OHP #OMHRS #RAICA #RAHC #SDS #CENSUS #CONTACT #POP #RPDB #HCDMDH #LOC #MS #OHCAS #ONMARG #ORGO #CURR |
| 27 | Community Business Intelligence project - Annual Report between ICES and Reconnect | #PDB #DN #LHN #PCCF #INST #AVGPRICE #ESTSOB #CCRS #DAD #HCD #NACRS #NRS #ODB #OHP #OMHRS #SDS #ASTHMA #CHF #MCMBABY #CENSUS #CONTACT #RPDB #ADP #CAPE #GAPP #OCCI #OHCAS #CIC #gtag #SDS #PCCF |
| 28 | Community Business Intelligence Project (CBI): Collaboration between ICES and Reconnect Community Health Services - Second report | #LHN #DAD #NACRS #OHP #OMHRS #RPDB #CAPE #CIC #CBI |
| 29 | Community Paramedicine Remote Patient Monitoring | #PDB #PCCF #REF #DAD #NACRS #OHP #OMHRS #ASTHM #ACHF #COPD #HYPER #ODD #CENSUS #RPDB #AVGPRICE #STDPRICE #CONTACT #CAPE #ONMARG #Interdev |

| # | Project Title | ICES Data |
|----|---|---|
| 21 | Comorbid cancer in multiple sclerosis (OCIMS): Diagnosis and outcomes | PDB DIN LHM PCCF CCRS CPRO DAD HCD NACRS ODB OHP SDS COPD HYPER CENSUS CONTACT RPDB ORGD OBSP OCR POP POPCAN Webber thesis dataset Projdatpatient Webber thesis dataset Projdatindex Greene Breast project dataset |
| 22 | Comorbidities in Immigrants with Multiple Sclerosis | PDB PCCF DAD NACRS ODB OHP OMHRS SDS ASTHMA CHF COPD HYPER ODD OMD ORAD CENSUS RPDB getag |
| 23 | Comparative effectiveness of hemiarthroplasty and total hip replacement for femoral neck fracture: propensity score matched cohort study | CPDB PDB DIN LHM PCCF REF INST AVGP/ICE EST/SCB CCRS CPRO DAD HCD NACRS NRS ODB OHP OMHRS RAICA RAHC SDS CENSUS CONTACT POP RPDB LOC MS OHCAS ONMARG NMS ORGD getag DEMENTIA popst datasets CHF COPD HYPER ODD ORAD |
| 24 | Comparative effectiveness of newer oral diabetes medications in preventing advanced diabetic retinopathy | PDB DIN PCCF REF INST DAD NACRS ODB OHP SDS ASTHMA ACHF COPD HYP HYPER ODD CENSUS CONTACT RPDB OLS OCR getag |
| 25 | Comparative risk and risk prediction of respiratory depression in patients treated with opioids for non-malignant pain | PDB HCD ODB OMHRS HYPER ODD OLS ONMARG CCRS HCD NRS OMHRS SDS |
| 26 | Comparative Risk of Falls and Fractures Among Older Adults with Dementia in Long-Term Care Receiving Trazodone or Atypical Antipsychotics | CPDB PDB DIN PCCF REF INST CCRS DAD NACRS ODB OHP OMHRS SDS CHF COPD HYPER ODD OMD ORAD RPDB ORGD |

| # | Project Title | ICES Data |
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| 26 | Comparative Safety and Efficacy of Antipsychotic Medications in Late-Life Psychotic Disorders: A Population-Based Study from Ontario | IPDB DIN LHIN PCCF REF INST CCRS DAD HCD NACRS ODB OHP OMHRS RAICA RAIHC SDS COPD ODD OMD CENSUS CONTACT POP RPDB ONMARG OCR ORGD |
| 27 | Comparative safety of intermittent vs continuous benzodiazepine prescribing, population based cohort study using the Ontario Drug Benefit Database | LHIN INST DAD NACRS OHP SDS ASTHMA CHF COPD CENSUS RPDB ONMARG ETHNIC ALR CIC OCR ORGD DAD OHP OMHRS SDS ALR Dementia |
| 28 | Comparative effectiveness of hemiarthroplasty and total hip replacement for femoral neck fracture: propensity-score matched cohort study | DEMENTIA |
| 29 | Comparing access to community-based specialist care for patients with schizophrenia and congestive heart failure | IPDB LHIN DAD NACRS OHP OMHRS CHF CENSUS CONTACT RPDB CIC ESTSOB |
| 30 | Comparing clinical and economic outcomes between testing and no-testing strategies in patients being evaluated for stable coronary artery disease | IPDB DIN LHIN PCCF REF AVGPRICE DAD NACRS ODB OHP COPD HYPER ODD CENSUS RPDB OCR ESTSOB CCRS HCD NRS OMHRS SDS ADP CAPE GAPP OCC1 ETHNIC CIC |
| 31 | Comparison of PC-API Between Patients Referred to the PCAP and Patients Not Referred to the PCAP | CPDB DIN LHIN PCCF INST ODB SDS CONTACT POP CHC Primary Care Asthma Program (PCAP) Postal Codes |
| 32 | Comparison of the outcomes and late effects of osteosarcoma and Ewing sarcoma in AYA, treated in Ontario pediatric versus adult centres | IPDB CIC |
| 33 | Compartment syndrome | LHIN INST DAD NACRS OHP OMHRS OUS ONMARG |
| 34 | Complex Care for Kids Ontario | DIN LHIN PCCF INST AVGPRICE ESTSOB CCRS DAD HCD NACRS ODB OHP OMHRS SDS CONTACT RPDB ADP CAPE GAPP OCC1 NRS |

| # | Project Title | ICES Data |
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| 21 | Complex Care for Kids Ontario: A province-wide integrated care intervention for children with medical complexity | ADP |
| 21 | Complex Care for Kids Ontario: A province-wide integrated care intervention for children with medical complexity | IPDB LHN PCCF DAD HCD NACRS ODB OHP OMHRS RPDB ADP CCKO dataset |
| 21 | Complications after Gunshot-associated Fracture Fixation in a Large Population Cohort | CPDB IPDB PCCF REF INST AVGPRICE STDPRIC E CCRS DAD HCD NACRS NRS ODB OHP SDS ASTHMA CHF COPD HIPER ODD OMD RPDB ADP HCDMOH |
| 21 | Comprehensive Family Physicians by LHN in Ontario | CPDB IPDB LHN PCCF OHP CONTACT RPDB Geo_Cross Walks File Northwest LHN Local Health Hub |
| 21 | Comprehensive Ontario Microbiology Laboratory Administrative data for AntiMicrobial Resistance (COMBAT -AMR) | IPDB DN LHN PCCF REF INST AVGPRICE ESTSOB CCRS DAD HCD NACRS NRS ODB OHP OMHRS SDS ASTHMA CHF COPD HIPER ODD OMD CENSUS CONTACT POP RPDB ADP ERCLAM OHAS ONMARG OC OCR ORGD |
| 21 | Concomitant use of dabigatran and proton pump inhibitors | DN ODB RPDB |
| 21 | Consultation and transfers of care from midwives to physicians in Ontario | DAD NACRS OHP OMHRS SDS CENSUS RPDB |
| 21 | Consumer Access to Personal Health Information for Asthma Self-Management | g66ag |
| 21 | Context-driven de-identification of free-text medical data at ICES (Mask) | RPDB OLIS EMERALD |
| 21 | Contrasting pneumonic incidence and severity of pneumonia in patients on clozapine with those prescribed other common atypical antipsychotics | IPDB LHN PCCF REF INST CCRS CORR DAD HCD NACRS NRS ODB OHP OMHRS SDS ASTHMA ACHF COPD HIPER ODD CENSUS CONTACT POP RPDB OH SURVEY ONMARG OCHS OCR g66ag |

| # | Project Title | ICES Data |
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| 25 | CorHealth 2018 Cardiac Surgery Report | DN LHN PCCF REF INST DAD NACRS ODB OHP SDS CHF COPD HYPER ODD CENSUS RPDB CCN |
| 26 | CorHealth Ablation Outcomes Report | IFDB DN LHN REF INST DAD NACRS NRS ODB OHP OMHRS SDS CHF COPD HYPER ODD RPDB DEMENTIA CCN |
| 27 | CorHealth Heart Failure EMERALD project | EMERALD |
| 28 | CorHealth Mitral Valve Clip Report | IFDB DN LHN REF INST DAD NACRS NRS ODB OHP OMHRS SDS CHF COPD HYPER ODD RPDB DEMENTIA CCN |
| 29 | CorHealth Ontario ICES 2019-20 Cardiac Surgery Risk Adjustment Models and Report | DN LHN PCCF REF INST CORR DAD NACRS ODB OHP SDS CHF COPD HYPER ODD RPDB OUS ETHNIC ORGD CCN OCR STS |
| 30 | CorHealth Percutaneous Coronary Intervention Report 2018 | IFDB DN LHN PCCF REF INST CCRS DAD NACRS ODB OHP SDS CHF COPD HYPER ODD CENSUS CONTACT RPDB CCN OUS |
| 31 | CorHealth TAVI Outcomes Report | IFDB DN LHN REF INST DAD NACRS NRS ODB OHP OMHRS SDS CHF COPD HYPER ODD RPDB DEMENTIA CCN |
| 32 | Cost effectiveness of prophylactic mastectomy with different cellular dermal matrix-assisted breast reconstruction techniques for the management of women at high risk for breast cancer | DAD NACRS SDS ODB OHCAS / HCD CCRS NRS RPDB OCR OBSP NDPP |

| # | Project Title | ICES Data |
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| 27 | Cost-effectiveness of Rivaroxaban and Apixaban Compared with Warfarin Therapy among Patients Diagnosed with Atrial Fibrillation in Ontario | IPDB DN LHN PCCF REF INST AVGPRICE ESTSOB CCRS CORR DAD HCD NACRS NRS ODB OHP OMHRS SDS CENSUS CONTACT POP RPDB ADP CAPE GAPP OCC1 OUS |
| 28 | Costs and Consequences of Rheumatoid Arthritis on Ontario's Healthcare System: Clinical and Economic Impacts | CPDB IPDB DN LHN PCCF REF INST CCRS CPRO DAD HCD NACRS NRS ODB OHP OMHRS SDS ASTHM ACHF COPD HIV HYPER OCC ODD OMD ORAD CENSUS CONTACT POP RPDB OCR AVGPRICE ESTSOB CONTACT ERCLAIM ONMARG |
| 29 | Costs of care per patient over time for each of the models of primary care in Ontario | CPDB IPDB LHN PCCF REF AVGPRICE ESTSOB CCRS DAD HCD NACRS ODB OHP OMHRS SDS CENSUS CONTACT POP RPDB ADP CAPE GAPP PCPOP |
| 30 | Cough Assist: user education needs, health service utilization, and outcomes | IPDB PCCF INST AVGPRICE ESTSOB CCRS DAD HCD NACRS NRS ODB OHP OMHRS SDS RPDB HCDMDH Cough assist cohort |
| 31 | Creating a platform for prediction of real world health and cost consequences of COPD | IPDB LHN PCCF CCRS DAD HCD NACRS NRS ODB OHP OMHRS SDS ASTHMA CHF COPD HYPER ODD CENSUS RPDB CCHS ORGO |
| 32 | Creating a validated algorithm for the identification of immigrant children with hemoglobinopathies in Ontario | CONTACT |
| 33 | Critical care utilization in adult patients undergoing major non-cardiac surgery across Ontario | CCRS HCD RAHC |

| # | Project Title | ICES Data |
|----|---|---|
| 21 | Cross-Provincial Primary Care Study | CPDB #PDB PCCF REF AVGPRICE ESTSOB CCRS DAD NACRS NRS ODB OHP OMHRS SDS CHF ODD OMD CENSUS CONTACT POP RPDB ADP CAPE GAPP ORGD OCR PCPOP getdiag Dataset#1: Commonwealth Fund Survey Dataset #2: Canadian Survey of Experiences with Primary Health Care |
| 22 | CTA Utilization in Patients Presenting with Blunt Cervical/Head Injury - A Retrospective Study of Current Clinical Practice and Its Impact on Outcome | NACRS HYPER ODD RPDB DIN ODB ORGD OHP 1) Clinical data from a retrospective cohort identified from the Ontario Trauma Registry (OTR) 2) Data extracted from images from PACS hospital diagnostic imaging repository services) Date_Stroke_First_Noted |
| 23 | Current and prospective utilization of biosimilars | #PDB DIN REF DAD NACRS ODB OHP OCCC ORAD CENSUS RPDB |
| 24 | Current baseline costs and modifiable drivers of utilization associated with Aortic Stenosis across hospitals and ambulatory sectors in Ontario | DIN LHN PCCF REF INST AVGPRICE ESTSOB CCRS DAD HCD NACRS NRS ODB OHP OMHRS SDS CHF COPD HYPER ODD RPDB ADP CAPE GAPP OCCI OHCAS DEMENTIA CCN |
| 25 | Current Ontario Surveillance Practices Following Extremity Sarcoma Surgery | DAD SDS OHP RPDB ALR OGRS OCR Cytobase |
| 26 | Current State of Acute Kidney Injury in Ontario | #PDB LHN PCCF REF INST CCRS DAD HCD NACRS NRS ODB OHP OMHRS SDS CENSUS CONTACT POP RPDB ADP ORRS GDML |
| 27 | Current trends in hip arthroscopy utilization and long-term cost-eficacy | #PDB DIN LHN PCCF REF INST DAD NACRS OHP SDS ODD ORAD POP RPDB NMS OMHRS |

| # | Project Title | ICES Data |
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| 21 | DA VINCI Health Care Utilization | DN PCCF CCRS DAD HCD NACRS NRS ODB OHP OMHRS RPDB CANN DA VINCI Database; ICP Participants from UNH Trillium and Willian Osler |
| 22 | Data linkage for evaluating maternal mental health on childhood outcomes following preterm birth | PCCF DAD NACRS OHP ASTHMA HYPER MOMBABY ODD CENSUS POP RPDB ONMARG CIC ORGO |
| 23 | Data quality assessment of First Nations identified data at ICES | OHCAS OTR OCR |
| 24 | Data to support the Public Health Ontario Urinary Tract Infection Program | CPDB #PDB DIN LHIN PCCF REF INST DAD NACRS ODB OHP OMHRS ASTHMA A CHF COPD HIV HYPER ODD CENSUS CONTACT POP RPDB CAPE NMS MCSS LHIN OLS |
| 25 | Days at home (DAH) in the last 6 months of life - a novel quality indicator for end of life (EOL) cancer care in Ontario | #PDB DN LHIN REF CCRS DAD NACRS NRS ODB OHP CENSUS RPDB ERCLAIM CIC ETHNIC OCR |
| 26 | Deep Learning Framework and Supervised Learning Challenges for Multimorbidity in the Population | DN PCCF REF CCRS CPRO DAD HCD HOBIC NACRS NRS ODB OHP OMHRS RAICA RAHC SDS ASTHMA CHF COPD HYPER OCCO ODD OMD ORAD CENSUS CONTACT RPDB OLS ONMARG NMS DEMENTA ORGO CIC OCR AVGP/PRICE ESTSOB ADP CAPE GAPP OCCO OHCAS LHIN ADP ERCLAIM LOC OCCO |

| # | Project Title | ICES Data |
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| II | Deep Learning Framework for Diabetes Sub-Classification | LHN PCCF REF CCRS DAD HCD NACRS NRS ODB OHP OMHRS SDS ASTHMA CHF COPD HYPER OCCC ODD OMD ORAD ORAD CENSUS CONTACT RPDB ADP ERCLAIM LOC OCCI OLIS OTR CFDR CC OCR ORGD CPDB #PDB LHN PCCF SDS ASTHM A CHF COPD HV HYPER MOMBABY OCCC ODD |
| II | Defining Catchment Areas for Chronic Kidney Disease Programs | CPDB #PDB LHN PCCF REF INST CORR DAD NACRS OHP SDS CENSUS RPDB CAPE ORRS GDML |
| II | Defining geographic catchment areas to assess laboratory-based outcomes for patients presenting to a hospital included in the OLIS | PCCF INST DAD NACRS OHP SDS CENSUS RPDB OLIS |
| II | Deliberate self-harm and mental health service utilization surrounding the release of the Netflix TV series 13 Reasons Why | LHN PCCF DAD NACRS OHP OMHRS CENSUS RPDB |
| II | Denosumab in chronic kidney disease: is there a role? | #PDB DN CORR DAD NACRS ODB OHP ASTHM A CHF COPD HYPER OCCC ODD ORAD RPDB CAPE OLIS ONMARG DEMENTIA ORGD CPDB |
| II | Depression and Diabetes Incidence in a Population Sample followed using Administrative Data | ODD CCHS NPHS CPDB #PDB DAD NACRS OHP OMHRS CONTACT RPDB |

| # | Project Title | ICES Data |
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| II | Derivation and validation of an electronic medical record text-based tool for identification of high cost users | CPDB IPDB DIN LHM PCCF REF INST AVGP/ICE ESTSOB CCRS DAD HCD HOBIC NACRS NRS ODB OHP OMRS RAICA RAIHC SDS ASTHMA CHF COPD HIV HYPER MOMBABY OCCC ODD OMD ORAD CENSUS CONTACT POP RPDB ADP CAPE GAPP OCCI QNCAS EMERALD |
| II | Derivation and Validation of Risk Scores for Predicting Poor Discharge Outcomes and Stroke Recurrence in Patients with Minor Ischemic Stroke or TIA | PCCF REF DAD NACRS ODB OHP RPDB RCSN |
| II | Derivation of risk prediction models and a computer microsimulation model in type 2 diabetes | IPDB DIN LHM PCCF REF INST DAD HCD NACRS ODB OHP OMRS SDS CHF ODD OMD RPDB EMERALD ORGD ORAD ETHNIC OCR OUS |
| II | Deriving and validating a prediction tool for advanced cancer patients to support early integration of palliative care | PCCF DAD HCD NACRS ODB OHP RAICA RAIHC CENSUS RPDB AIR OCR ORGD CPDB AVGP/ICE ESTSOB CAPE ASTHMA CHF COPD HYPER ODD OMD ORAD Symptom Management Database |
| II | Deriving stroke severity from administrative data | DAD NACRS OHP SDS CHF HYPER ODD CCRS ODB |
| II | Dermatologic Follow-up After Primary Cutaneous Melanoma: A Retrospective Cohort Study | IPDB DAD NACRS OHP SDS RPDB OCR ORGD |
| II | Describing buprenorphine use and treatment retention among individuals who undergo routine surgery | IPDB DIN LHM PCCF REF INST DAD NACRS ODB OMRS SDS CHF COPD HIV HYPER OCCC ODD OMD CENSUS RPDB NRS CCRS HCD RAICA RAIHC |

| # | Project Title | ICES Data |
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| 30 | Describing management patterns in community-dwelling older adults with new presentation of a sleep disorder | LHN PCCF REF INST DAD NACRS OHP SDS RPDB AIR OCR |
| 31 | Describing primary care physicians that refer to telepsychiatry | CPDB IPDB LHN DAD NACRS OHP OMHRS CENSUS POP RPDB CAPE PCPOP |
| 32 | Detection, treatment, outcomes and costs of ductal carcinoma in situ of the breast | LHN PCCF REF DAD NACRS OHP SDS CONTACT RPDB CIC NMS |
| 33 | Determinants of Emergency Department Use among Home Care Clients | CPDB IPDB DIN LHN PCCF REF CCRS DAD HCD HOBIC NACRS NRS ODB OHP OMHRS RAHA RAHC SDS CENSUS CONTACT RPDB CAPE ONMARG |
| 34 | Determinants of re-operation for transvaginal surgeries in Ontario, Canada | IPDB DIN LHN PCCF REF INST DAD NACRS ODB OHP OMHRS SDS ODD CENSUS CONTACT POP RPDB ONMARG ORGD |
| 35 | Determine the impact of ASPs on antimicrobial utilization in acute care hospitals in Ontario | INST DAD Antimicrob Ontario Antimicrobial Stewardship Program Landscape Survey |
| 36 | Determining optimal, equitable and cost-effective strategies to prevent cases of travel-related infections in VFRs and other travellers at risk | IPDB PCCF CCRS DAD HCD NACRS NRS ODB OHP OMHRS SDS CENSUS RPDB CAPE CIC g6tag Measuring burden of imported infectious diseases (PHS-ICES linkage) |
| 37 | Determining Preventable Acute Care Spending among High-Cost Patients | REF CAHE CIC |
| 38 | Determining sex disparities in Stroke Care and Outcomes to optimize recovery (DISCOVER) – Healthcare cost | IPDB PCCF INST AVGPR/E ESTS/OB CCRS DAD HCD NACRS NRS ODB OHP OMHRS RAHC SDS CENSUS RPDB ADP CAPE GAPP OCCI OHCAS OSR ONMARG |

| # | Project Title | ICES Data |
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| 35 | Determining site volume and cardiac outcomes for Ontario sites enrolled in CODE-M using big data | DIN PCCF REF INST DAD NACRS ODB OHP SDS CHF CONTACT RPDB OLIS |
| 36 | Develop a novel quasi-experimental study design to evaluate the public health benefits of extreme cold alert program in Toronto, Ontario | DAD NACRS SDS ASTHMA CHF COPD HYPER ODD OMD RPDB ORGD OPHECW OHP |
| 37 | Developing a case-finding algorithm to identify patients with spinal cord injury in Ontario primary care electronic health records | EMRALD PDB DAD NACRS ODB OHP OMHRS SDS ASTHMA CHF COPD HYPER ODD RPDB |
| 38 | Developing a multi-source surveillance system for Fetal Alcohol Spectrum Disorder and prenatal alcohol exposure (SFASD/PAE) in Canada | CCRS DAD HCD HOBIC NACRS NRS OHP OMHRS RPDB |
| 39 | Developing an Artificial Neural Network for predicting the risk of local recurrence among women with Ductal Carcinoma in Situ of the breast | FPDB DIN LHN PCCF REF INST CCRS CORR DAD HCD NACRS ODB OHP RAICA RAIHC SDS HYPER ODD CONTACT RPDB OLIS ORGD ORRS |
| 40 | Developing an Artificial Neural Network using ESAs for predicting ED visit risk among patients with cancer | CPDB FPDB DIN LHN PCCF REF CCRS DAD HCD NACRS NRS ODB OHP OMHRS SDS ASTHMA A CHF COPD HIV HYPER MOMBABY OCCC ODD OMD ORAD CENSUS RPDB CAPE CENSUS/SEA ONMARG POP CAN CIC |
| 41 | Developing New Palliative Care Quality Indicators and Benchmarks in Cancer across Canada | DAD HCD NACRS ODB OHP RAICA RAIHC RPDB RAIHC/MOH CIC ETHNIC OCR PCCF ORGD |
| 42 | Developing risk prediction algorithms for CVD in individuals treated for mood/anxiety disorders | ERCLAIM |
| 43 | Development and validation of a prediction model for severe (hospitalized) RSV through the development of an ICES based RSV platform | PCCF |
| 44 | Development and validation of clinical prediction models for skin cancer after solid organ transplantation | CARE CIC |

| # | Project Title | ICES Data |
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| II | Development of a model to minimize misclassification bias in the identification of thoracic aortic surgery in Ontario from administrative database | DAD ODB OH P CONTACT RPDB |
| II | Development of a prediction model for cardiovascular-related death using the CANHEART cohort | CPDB IPDB DN LHN PCCF REF INST AVGPRICE STDPRICE E-CORR DAD NACRS ODB OHP OMHRS SDS ASTHMA CHF COPD HY HYPER ODD ORAD CENSUS CONTACT POP RPDB CAPE CCHS CIC ETHNIC OCR ORGD PHYSNET GDM OLIS EMERALD |
| II | Development of an information system from EMR & health administrative data for assessment of surveillance and quality of care of psoriatic disease | AVGPRICE ESTSOB CCHS HCD NRS OMHRS ASTHMA COPD HYPER ODD ORAD ADP CAPE ONCAS OHS |
| II | Development of Diagnostic Algorithms for Predicting Disease Phenotypes in Adult Onset UC Patients Using Ontario Health Administrative Data | DAD NACRS OHP CONTACT RPDB Mount Sinai Hospital UC Cohort |
| II | Development of Neurodegenerative Diseases from Exposure to Outdoor Air Pollution | OPRECE |
| II | Development of novel methods for measuring clinical outcomes in clinical trials using big data | CPDB IPDB DN LHN PCCF REF INST DAD NACRS ODB OHP SDS CENSUS CONTACT POP RPDB OLIS OCR ORGD |
| II | Developmental disabilities in Ontario's criminal justice system: Using data to tell the story: MCSCS data | IPDB LHN REF DAD NACRS OHP ASTHMA ACHF COPD HYPER ODD CENSUS CONTACT RPDB EMERALD PCPOP INST ONMARG CHC ACG macro |
| II | Developmental disabilities in Ontario's criminal justice system: telling the story with federal correctional data | IPDB LHN PCCF REF REF INST DAD HCD NACRS ODB OHP SDS ASTHMA CHF COPD HYPER ODD OMD CENSUS POP RPDB CAPE OLIS OHS INST CHC ACG Correctional Service Canada Data |

| # | Project Title | ICES Data |
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| II | Developmental disabilities in Ontario's criminal justice system: telling the story with forensic inpatient data | #PDB DIN LHM PCCF REF INST DAD NACRS ODB OHP OMHRS SDS CENSUS CONTACT POP RPDB CAPE OMARG INST CHC ACG |
| III | Diabetes Education Centre Resources and Quality of Diabetes Care Within Networks | #PDB DIN PCCF INST CCRS DAD NACRS ODB OHP OMHRS SDS ODD CENSUS POP RPDB CAPE OUS PHYSNET |
| III | Diabetes HbA1C control, health system utilization and cost (Diabetes control, health care use and cost) | LHM PCCF AVGP/ICE STDPRIC E CCRS DAD HCD NACRS NRS ODB OHP OMHRS SDS ASTHMA CHF COPD HYPER ODD OMD RPDB EMERALD OUS |
| III | Diabetes prevalence and incidence of complications in SLFNHA communities over 5 years | PCCF CORR DAD NACRS OHP SDS ODD CONTACT RPDB |
| III | Diabetes Prevalence by GTA Census Tracts | LHM PCCF REF DAD NACRS OHP SDS ODD CENSUS RPDB |
| III | Diabetes Prevalence by GTA Census Tracts - Update | #PDB DIN PCCF REF INST AVGP/ICE ESTS/OB CCRS DAD HCD NACRS NRS ODB OHP OMHRS SDS CHF COPD HIV HYPER MOMBABY OCCO ODD OMD ORAD RPDB ADP CAPE GAPP OCCI OHCAS NMS |
| III | Diabetic Ontarians unscreened for retinopathy - Update | #PDB PCCF OHP ODD CONTACT RPDB PCPOP CPDB ESTS/OB DAD NACRS OMHRS ASTHMA CHF COPD HYPER OMD PCPOP g6saq g6ofe |

| # | Project Title | ICES Data |
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| 31 | Diagnosis of lung cancer and time to initiate targeted therapy in metastatic NSCLC in Ontario | DAD NACRS SDS ODB OHP OHAS / HCD RPDB OCR OCRIS NDPP |
| 32 | Diagnosis of psychotic disorder after childhood and adolescent psychiatric disorder | LHN PCCF DAD NACRS OHP OMRS SDS NOMBABY CENSUS RPDB ONMARG CIC |
| 33 | Diagnostic care fragmentation in symptomatic breast cancer patients | CPDB FPDB LHN PCCF REF INST OCRS DAD HCD NACRS NRS OGB OHP OMRS SDS CENSUS CONTACT RPDB CAPE ONMARG ALR NDPP OSIP OCR PHYSNET Ontario Breast Screening Program Breast Assessment Sites |
| 34 | DIBI at ICES: DOACs in Bioprostheses | DIN PCCF REF DAD NACRS ODB OHP SDS RPDB CCN |
| 35 | Did the election of Trump break the hearts of people in Ontario, Canada? A population-level retrospective cohort study | CPDB FPDB DIN LHN PCCF REF INST DAD NACRS ODB OHP SDS HYPER ODD OMD CONTACT RPDB |
| 36 | Differences in outcomes in kidney transplant recipients with optimal versus suboptimal dialysis starts at the time of graft failure | FPDB PCCF INST CORR DAD NACRS OGB OHP SDS HY ODD OMD CENSUS POP RPDB OCR ORGO ORGD |
| 37 | Differences in the Advanced Treatment of Parkinson's Disease: Examining Use and Outcomes of Deep Brain Stimulation | FPDB LHN PCCF REF INST CORR DAD HCD NACRS OHP SDS CENSUS CONTACT POP RPDB |

| # | Project Title | ICES Data |
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| 31 | Direct Attributable Costs of Children with Inflammatory Bowel Disease in Canada: Predicting High-Cost Users of the Health System | <p> IPDB PCCF AVGP/RIE ESTSOB CCRS DAD HCD NACRS NRS ODB OHP SDS OCCC CONTACT RPDB ADP CAPE ERCLA/M GAPP OCC1 OHCAS Dataset #1: CCHR/CHILD Foundation Canadian Children IBD Network (CIDsCaNN) (P/BD_Costs_all) Dataset #2: CCHR/CHILD Foundation Canadian Children IBD Network (CIDsCaNN) (P/BD_Costs_therapy) Dataset #3: CCHR/CHILD Foundation Canadian Children IBD Network (CIDsCaNN) (P/BD_JMP3) Dataset#4: CCHR/CHILD Foundation Canadian Children IBD Network (CIDsCaNN) (P/BD_PGE) </p> |
| 32 | Direct healthcare costs for vancomycin-resistant enterococcal (VRE) infections in Ontario, Canada: population-based matched cohort study | <p> LRI N REF NS T AVGP/RIE CCRS DAD HCD NACRS NRS ODB OHP OMHRS SDS RPDB ADP CAPE GAPP HCDMDH OCC1 NADP VRE patient cohort VRE Positive Blood Culture </p> |
| 33 | Direct oral anticoagulants and the risk of acute kidney injury | <p> DIN P/CF REF DAD NACRS ODB OHP SDS CONTACT RPDB GDML OUS IPDB CORR </p> |
| 34 | Disparities in access to endometrial cancer surgery in Ontario and the influence of morbid obesity on wait times | <p> IPDB LIRN INST DAD NACRS OHP SDS ODD CENSUS CONTACT RPDB ONMARG CIC OCR CCHS Cancer Care Ontario (CCO) Wait Time data </p> |
| 35 | Disparities in Colorectal and Lung Cancer Stage at Diagnosis | <p> CPDB IPDB LIRN PCCF DAD OHP CENSUS RPDB CAPE CIC OCR getdiag </p> |
| 36 | Distribution of Kidney Function Laboratory Values among Patients Screened in Primary Care | <p> SDS </p> |
| 37 | Distribution of Kidney Function Laboratory Values among Patients Screened in Primary Care using OLIS | <p> IPDB PCCF REF CORR DAD OHP SDS RPDB OLIS </p> |
| 38 | DMAB: Denosumab for Osteoporosis - Use, Safety and Effectiveness | <p> IPDB PCCF AVGP/RIE CCRS DAD HCD NACRS NRS ODB OHP OMHRS SDS ASTHMA CHF COPD HYPER ODD OMD RPDB ADP ONMARG OCR </p> |
| 39 | Do climate factors influence the geographic distribution of RSV hospitalizations among children in Ontario? | <p> ORCO GEMSURF AQHI Ecological Land Classification: Ecoregions </p> |

| # | Project Title | ICES Data |
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| II | Do common urologic procedures increase the risk of an infected joint prosthesis? | IPDB DIN LHN PCCF REF INST DAD NACRS ODB OHP SDS ODD CENSUS CONTACT POP RPDB CORR |
| II | Do physician-patient relationships or high visit frequency affect the link between daily patient volume and quality of primary care? | DAD OHP OMHRS SDS ALR Dementia |
| II | DOC Utility: screening Depression, Obstructive sleep apnea and Cognitive impairment to identify stroke clinic patients at risk of adverse outcomes | ONMARG IPDB HCD ODB OMHRS HYPER ODD OLS DOC Utility Data |
| II | Does Proton-Pump Inhibitor Use Increase Implant Failure in Arthroplasty Patients over the Age of 65? | IPDB LHN PCCF INST DAD NACRS ODB OHP OMHRS CENSUS RPDB CAPE ONMARG |
| II | Does the use of brachial plexus block reduce ED visits and unplanned hospital admissions following ambulatory shoulder surgery in ON? | CPDB IPDB LHN PCCF REF INST DAD NACRS OHP SDS CENSUS CONTACT POP RPDB CAPE ONMARG |
| II | Drivers and consequences of variation in aortic stenosis therapy in Ontario | DIN PCCF REF DAD NACRS ODB OHP SDS CHF COPD HYPER ODD RPDB DEMENTIA CCN |
| II | Drug insurance and healthcare costs | CCRS DAD HCD NACRS NRS ODB OHP OMHRS SDS CHF HYPER ODD ADP ETHNIC OCHS PCPOP |
| II | Drug safety in patients with low eGFR - feasibility | IPDB DIN LHN PCCF REF CORR DAD NACRS ODB OHP SDS CENSUS CONTACT POP RPDB GDML OLS |

| # | Project Title | ICES Data |
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| 28 | Early detection of Health Problems | CPDB IPDB DIN LHIN PCCF REF INST CCRS DAD HCD HOBIC NACRS NRS ODB OHP OMHRS RAICA RAHC SDS ASTHM A CHF COPD HIV HYPER MOMBABY OCCC ODD OMD ORAD CENSUS CONTACT POP RPDB HCES ADP CAPE CENSUSCA EMERALD CCHS OCR PCPOP |
| 29 | Early Development Instrument (EDI) Data Integration | DIN LHIN PCCF DAD HOBIC OHP RPDB %getacog ASTHM A NMS |
| 30 | Early healthcare use patterns among resettled refugees in Ontario | IPDB DAD NACRS OHP CENSUS RPDB NMS %getacog |
| 31 | Early hospital discharge of Ontario midwifery clients: Trends over time | IPDB PCCF DAD NACRS OHP OMHRS SDS ASTHM CHF COPD HIV HYPER MOMBABY OCCC ODD OMD ORAD CENSUS CONTACT RPDB ADP CAPE OUS ONMARG |
| 32 | Early Phase Interventions for Acute Ischemic Heart Failure | MOMBABY ORGD |
| 33 | Early Psychosis and Help-Seeking in Primary Care | LHIN PCCF REF INST DAD NACRS OHP OMHRS SDS HYPER MOMBABY ODD CENSUS CONTACT POP RPDB CPDB IPDB LHIN PCCF SDS ASTHM CHF COPD HIV HYPER MOMBABY OCCC ODD OMD ORAD PCPOP |

| # | Project Title | ICES Data |
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| 31 | Eating disorders in Ontario | IPDB LHN DAD NACRS ODB OHP OMHRS ASTHMA CHF COPD HW HYPER MOMBABY OCC ODD OMD ORAD CENSUS RPDB CAPE ONMARG CIC ETHNIC OCR ORGO |
| 35 | Echocardiographic Predictors of Outcomes in Patients with and without Heart Failure | IPDB DIN REF DAD NACRS ODB OHP SDS ASTHMA CHF COPD HYPER MOMBABY ODD RPDB ORGO Echo Data |
| 36 | Economic burden of initial melanoma treatment in Ontario | CPDB IPDB DIN INST CCRS DAD HCD NACRS NRS ODB OHP OMHRS SDS RPDB ADP ALR NDPP OCR ORGO Wholesale Cancer Drug Costs |
| 37 | Economic Burden of Low Vision Population in Ontario | IPDB DIN LHN PCCF REF INST AVGP/RE ESTS/OB CCRS DAD HCD NACRS NRS ODB OHP OMHRS SDS CENSUS POP RPDB ADP CAPE GAPP OCCI OHCAS OCR |
| 38 | Economic burden of Respiratory Syncytial Virus (RSV)-associated hospitalizations of infants and young children | IPDB DIN LHN PCCF INST AVGP/RE ESTS/OB CCRS DAD HCD NACRS NRS ODB OHP OMHRS SDS ASTHMA CHF MOMBABY CENSUS CONTACT RPDB ADP CAPE GAPP OCCI OHCAS |

| # | Project Title | ICES Data |
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| 31 | Economic Burden of Thoracic Aortic Dissections and Thoracic Aortic Aneurysms: A Population Based Cost Analysis | IPDB DIN LHM PCCF REF INST AVGP/PC ESTSOB CCRS DAD HCD NACRS NRS ODB OHP SDS ASTHMA CHF COPD HYPER ODD OMD CONTACT RPDB HCD/ACH ORGD |
| 32 | Economic Evaluation of Panitumumab Monotherapy versus Combination Cetuximab-Firinotecan Therapy in Third-Line Treatment of Metastatic Colorectal Cancer in Ontario: a Population-Based Analysis | DAD NACRS ODB OHP OHCAS/HCD CCRS NRS RPDB OCR NDPP |
| 33 | ED Visits over time at RHSC | LHM PCCF REF INST NACRS CENSUS CONTACT POP RPDB |
| 34 | ED visits, Repeat ED visits, and hospital admissions related to falls among seniors in Ontario | LHM PCCF DAD NACRS CENSUS POP RPDB |
| 35 | Edmonton Symptom Assessment Scale in newly diagnosed patients with multiple myeloma: symptom burden and health care utilization | LHM PCCF REF INST DAD HCD HOBIC NACRS ODB RPDB ONMARG ALR NDPP OCR ESAS |
| 36 | Effect of chronic comorbidities on time to diagnostic testing and colorectal cancer mortality | CPDB IPDB DIN PCCF REF CORR DAD NACRS ODB OHP OMHRS SDS CHF COPD HYPER OCCC ODD OMD CENSUS CONTACT RPDB CAPE DEMENTIA ORGD CIC OCR Laboratory Reporting Tool (LRT) Dataset #2: Colonoscopy Interim Reporting Tool (CIRT) |
| 37 | Effect of commonly prescribed medications and co-morbidities on patients with newly diagnosed DLBCL in the rituximab era: a large population cohort | LHM REF CCRS DAD NACRS ODB OHP SDS ODD RPDB ETHNIC NDPP OCR OLS |
| 38 | Effect of continuity of care and patient-level factors on the development of multimorbidity | IPDB DAD ODB OHP SDS ASTHMA CHF COPD HYPER ODD OMD ORAD RPDB CAPE CPDB IPDB CENSUS CONTACT ONMARG |

| # | Project Title | ICES Data |
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| 1 | Effect of continuity of care and patient-level factors on the development of multimorbidity | CPDB #PDB CENSUS CONTACT ONMARG |
| 2 | Effect of the implementation of direct-acting antiviral treatment of chronic hepatitis C on the risk of hepatocellular carcinoma in Ontario, Canada | #PDB PCCF INST CCRS DAD NACRS ODB OHP SDS RPDB OCR OIS CIC ORGD CLD ODD |
| 3 | Effect of Trazodone on Neurodegenerative Disease Incidence and Mortality | LOC CHF |
| 4 | Effectiveness and safety of adjuvant endocrine therapy among post-menopausal women treated with breast cancer in Ontario, Canada | #PDB DN LHN PCCF REF DAD NACRS ODB OHP SDS CHF HYPER ODD ORAD CENSUS CONTACT RPDB DEMENTA ORGD AIR NDFP OCR |
| 5 | Effectiveness and safety of oral anticoagulants in the transition period from hospital to home | #PDB DN DAD NACRS ODB OHP CHF HYPER ODD RPDB OCR |
| 6 | Effectiveness of Confidential Reports Describing Prescriptions for Antipsychotic Medications in Long-Term Care Homes | #PDB DN INST CCRS DAD NACRS ODS OHP OMRS RAICA RAHC RPDB NRS |
| 7 | Effects of Ambient Air Pollution on Incident Atrial Fibrillation and Stroke | DAD NACRS ODB OHP SDS ASTHMA CHF COPD HYPER ODD OIMD CENSUS CONTACT POP RPDB ONMARG OPHECE NPHS CCHS |
| 8 | Effects of hospital funding reforms in Ontario on patients diagnosed with localized prostate cancer: a population-based retrospective cohort study | #PDB DN LHN PCCF REF INST DAD NACRS ODB OHP SDS CHF COPD HYPER ODD OIMD CENSUS POP RPDB OCR ORGD |

| # | Project Title | ICES Data |
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| 35 | Effects of non-medication adherence on COPD related health care utilization | CPDB IFDB DN LHN PCCF AVGPRCE ESTSOB CCRS DAD HCD NACRS ODB OHP OMHRS SDS ASTHMA CHF COPD HYPER OCCC ODD OMD ORAD CENSUS CONTACT RPDB ADP CAPE GAPP OCCI OHCAS DEMENTIA NRS ONMARG |
| 36 | EGS & Transplants | INST CORR DAD NACRS OHP ASTHMA CHF COPD HIV HYPER CENSUS POP RPDB ORGO |
| 37 | EHRM-ML: Using Machine Learning to Identify Previously Unrecognized Predictors of Mortality to Improve the EHRM mortality models | DAD NACRS ODB OHP SDS RPDB EDHF EFFECT 2 IFDB PCCF ASTHMA CHF COPD HYPER MCMBABY ODD ORGO EFFECT EHRM ISCHEMC CCRS HCD NRS OMHRS INST |
| 38 | Eligibility criteria for seniors' dental program in the city of Hamilton | PCCF ODB CENSUS RPDB |
| 39 | Elective surgery practice patterns and outcomes in end of life populations | CPDB IFDB DN LHN PCCF REF INST AVGPRCE ESTSOB CCRS OPRO DAD HCD NACRS NRS ODB OHP OMHRS RACA RAHC SDS CHF COPD HIV OCCC ODD OMD ORAD CENSUS CONTACT POP RPDB ORGO gelsq OCR |
| 40 | Elements of High-Quality Colorectal Cancer Care in Ontario | IFDB LHN PCCF REF INST DAD NACRS OHP SDS ASTHMA CHF COPD HIV HYPER ODD OMD CENSUS RPDB OCR ORGO |

| # | Project Title | ICES Data |
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| 41 | Elevated cardiac troponin levels and risk of adverse outcomes in patients with cardiovascular and non-cardiovascular conditions | IPDB DN PCCF REF INST DAD NACRS ODB OHP SDS HYPER ODD OMD CONTACT RPDB HSTroponin |
| 42 | Emergency Department Outcomes for patients with Cancer | IPDB PCCF INST CCES DAD HCD NACRS OHP RAICA RAHC ASTHMA CHF COPD HYPER ODD OMD RPDB ALR NDP OCR SDS |
| 43 | Emergency Department Self-Harm and Suicide among Immigrants and Non-Immigrants to Ontario | LHN PCCF DAD NACRS ODB OHP OMHS CENSUS CONTACT RPDB ONMARG CIC ETHNIC ORGD |
| 44 | Emergency Department Utilization by Pregnant Women in Ontario | LHN PCCF REF DAD NACRS OHP SDS MOMBABY CENSUS RPDB BORN CIC gtag |
| 45 | Endometrial ablation: morbidity, outcomes, and cancer | CPDB IPDB LHN PCCF REF INST DAD NACRS OHP SDS HYPER ODD CENSUS PCF RPDB OCR |
| 46 | Endometriosis, Infertility and Obstetrical Outcomes in Ontario | IPDB PCCF REF DAD NACRS OHP SDS MOMBABY CENSUS CONTACT RPDB BORN |
| 47 | Endoscopic experience and colonoscopy-related complications: A population-based study | IPDB LHN INST DAD NACRS ODB OHP SDS ASTHMA CHF COPD HYPER OCCC ODD OMD ORAD CENSUS RPDB ONMARG DEMENTIA OCR |
| 48 | Endovascular thrombectomy (EVT) ICES analytics support | CPDB IPDB LHN PCCF REF DAD NACRS OHP SDS MOMBABY CONTACT RPDB |

| # | Project Title | ICES Data |
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| 40 | End-Stage Renal Disease Related Deaths in Ontario | CPDB IPDB DIN LHN PCCF REF INST CCRS DAD HCD HOBIC NACRS NRS ODB OHP OMHRS RAICA RAHC SDS ASTHM A CHF COPD HIV HYPER MCMABY ODD OOD ORAD ORAD CENSUS CONTACT POP RPDB HCES ADP CAPE CENSUSCA EMERALD CCHS OCR PCPOP |
| 40 | Enhancing cardiovascular risk prediction and improving treatment using coronary artery calcium scoring | CPDB IPDB DIN LHN PCCF REF INST CORR DAD NACRS ODB OHP SDS ASTHM A CHF COPD HYPER ODD CENSUS CONTACT POP RPDB OLS EMRPC ETHNIC ORGO GDML OCR CAC Scores |
| 41 | Enhancing the Collaboration with Primary Care Teams Whose Patients are Treated at Sunnybrook Health Sciences Centre - an OHT Project | CPDB IPDB INST DAD NACRS OMHRS SDS RPDB CAPE |
| 42 | Enriching Word Embeddings with Clinical Notes | CPDB IPDB DIN LHN PCCF REF INST CCRS DAD HCD HOBIC NACRS NRS ODB OHP OMHRS RAICA RAHC SDS ASTHM A CHF COPD HIV HYPER MCMABY ODD OOD ORAD ORAD CENSUS CONTACT POP RPDB HCES ADP CAPE CENSUSCA EMERALD CCHS OCR PCPOP |
| 43 | Environmental Burden of Disease Study (EBD) by the Environmental and Occupational Health (EOH) Team at Public Health Ontario (PHO) | IPDB AVGP/ICE EST/DOB DAD OHP SDS ASTHMA COPD HYPER ODD CENSUS CONTACT POP RPDB CAPE OBSP OCR ORGO PCPOP |

| # | Project Title | ICES Data |
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| 41 | Environmental Sensitivities, Chronic Fatigue Syndrome and Fibromyalgia in Ontario | DIN CCRS DAD HCD NACRS NRS ODB OHP OMHRS SDS CONTACT RPDB CAPE CCHS |
| 45 | Epidemiology and health care utilization of patients with sarcoidosis in Ontario, Canada | CPDB #PDB DIN LHIN PCCF REF CORR DAD DAD ODB OHP CENSUS CONTACT RPDB CENSUSCA ERCLAIM CERNER |
| 45 | Epidemiology and Outcomes of pregnancy in cirrhosis: A population-based study | CPDB #PDB DIN LHIN CORR DAD DAD NACRS ODB OHP SDS MOMBABY CONTACT RPDB OLIS ORGD Cirrhosis Cohort PHO Hepatitis B and C lab data |
| 47 | Epidemiology of Pediatric Cirrhosis in Ontario: A population-based study | #PDB DIN LHIN REF CORR DAD DAD NACRS ODB OHP SDS MOMBABY ODD CENSUS CONTACT POP RPDB OLIS ORGD CPDB INST HYPER OCR ETHNIC |
| 48 | Epidemiology of Prenatal Opioid Use and Associated Maternal Characteristics in Ontario | LHIN PCCF DAD NACRS ODB OHP OMHRS SDS HIV MOMBABY CENSUS RPDB NMS CIC 95sq CORR HCD NRS RACIA SDS ORGD |
| 48 | Epidemiology of Prosthetic Hip and Knee Joint Infections in Ontario | CPDB #PDB DIN LHIN PCCF INST CCRS DAD HCD NACRS NRS ODB OHP OMHRS SDS HYPER ODD CENSUS POP RPDB OLIS ONMARG POPCAN ORAD DEMENTIA OMHRS |
| 49 | Epidemiology, Natural History and Healthcare Utilization of Young Adults with Cirrhosis (ENHANCE) | DIN REF INST CCRS HCD ASTHMA CHF CPDB HIV HYPER OCOC ODD POP ETHNIC |

| # | Project Title | ICES Data |
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| 6 | Epidemiology, Natural History, and Healthcare Utilization of Young Adults with Cirrhosis (ENHAnCe): A Population-based Study | CPDB IPDB LHN CORR DAD NACRS ODB OHP SDS MOMBABY CONTACT RPDB HCES OLIS ORGO DIN REF INST CCRS HCD ASTHMA CHF COPD HIV HYPER OCCC ODD POP ETHNIC 1ECHO and PHCC Database 2Public Health Ontario Hepatitis B and C Data |
| 7 | Epilepsy risk following ICU hospitalization for sepsis | IPDB LHN CORR DAD NACRS OHP SDS RPDB OLIS ORRS |
| 8 | Equity in immunity to measles and rubella in Ontario | DAD NACRS OHP RPDB CIC PHO LabW are - measles and rubella immunity data (quantitative) |
| 9 | Equity in the utilization of psychiatric inpatient care among patients with severe mental illness (SMI) in Ontario, Canada | LHN PCCF REF CCRS CPRO DAD HCD NACRS NRS ODB OHP OHRS SDS CHF ODD CENSUS CONTACT POP RPDB ONMARG ORGO CIC |
| 10 | Estimating Albumin-to-Creatinine Ratio Test Values for Patients without Tests | CPDB IPDB DIN LHN PCCF REF INST DAD HCD NACRS ODB OHP SDS CENSUS RPDB ERCLAIM HCCMCH NPHS OHS ONMARG NDIP OCR ORGO |
| 11 | Estimating HIV incidence and the undiagnosed fraction of people living with HIV in Ontario | DAD NACRS ODB OHP HIV CENSUS CONTACT RPDB CIC ORGO |
| 12 | Estimating the completeness of physician billing claims for diabetes case ascertainment using population-based prescription drug data | CPDB IPDB DIN LHN PCCF REF DAD ODB OHP ODD CENSUS POP RPDB |
| 13 | Ethnic variations in the time trends of the incidence and prevalence of dementia and parkinsonism | DAD NACRS ODB OHP SDS ASTHMA CHF COPD HYPER ODD OMD CENSUS CONTACT POP RPDB NPHS ONMARG CIC ETHNIC CCHS |

| # | Project Title | ICES Data |
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| 4 | Evaluating Access Patterns of the Ontario Naloxone Program for Pharmacies | DN LHN PCCF REF DAD NACRS ODB OHP OMHRS SDS ASTHM A COPD CENSUS CONTACT POP RPDB ONMARG NIS CPDB IPDB Interactive Opioid Tool |
| 4 | Evaluating ADP-Funded Insulin Pump Centres in Ontario | CPDB IPDB LHN PCCF REF INST DAD NACRS ODB OHP RAHC CENSUS RPDB CAPE PCPOP |
| 4 | Evaluating appropriateness of use and clinical outcomes of Ezetimibe in Ontario | CPDB IPDB DN LHN PCCF REF INST DAD NACRS ODB OHP SDS CHF COPD HYPER ODD OMD CENSUS CONTACT POP RPDB |
| 4 | Evaluating health resource utilization patterns in sickle cell disease in emergency departments in Ontario, Canada | LHN PCCF REF INST AVGPRICE ESTSOB DAD NACRS OHP OMHRS SDS ASTHMA OCCC CONTACT RPDB MOMBABY PIBD |
| 4 | Evaluating outcomes and hospitalizations after transcatheter mitral valve repair in Ontario | IPDB DN LHN REF CORR DAD ODB OHP SDS CENSUS RPDB OLS ORRS |
| 4 | Evaluating Palliative Care and Healthcare Utilization | IPDB DN LHN PCCF REF INST AVGPRICE ESTSOB CCRS CORR CPRO DAD HCD NACRS NRS ODB OHP OMHRS RAICA RAHC SDS ASTHMA CHF COPD HIV HYPER ODD OMD CENSUS CONTACT POP RPDB ADP ORGB NIS OCR |

| # | Project Title | ICES Data |
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| 6 | Evaluating Palliative Care in Non-Cancerous Disease | CPDB IPDB DIN LHN PCCF REF INST AVGP/ICE ESTSOB CCRS CRR CPRO DAD HCD NACRS NRS ODB OHP OMHRS RAICA RAHC SDS ASTHMA CHF COPD HIV HYPER OCC ODD OMD CENSUS CONTACT FCF RPDB ADP ORGD |
| 6 | Evaluating Quality Improvement Interventions in Colorectal Cancer Surgery in Ontario | LHN CCRS DAD NACRS OHP RPDB OCR AIR NDPP |
| 6 | Evaluating the appropriateness of community antibiotic use: An OPTMISE study | IPDB LHN PCCF DAD NACRS OHP OMHRS SDS CENSUS CONTACT RPDB OMARG ORGD Military Identifier getag ODB OMHRS SDS ODD CAPE OCR PCPOP |
| 6 | Evaluating the association between maternal and early life exposures to ambient air pollution and the risk of pediatric inflammatory bowel disease | LHN PCCF INST CCRS CPRO DAD HCD NACRS ODB OHP RAHC ASTHMA CHF COPD HYPER OCC ODD OMD ORAD CONTACT RPDB CENSUS Normalized Difference Vegetation Index (NDVI) -MODIS dataset Residential greenness measures from the Landsat satellite |
| 6 | Evaluating the cost and effectiveness of the SAFE Unit | LHN PCCF INST AVGP/ICE CCRS CPRO DAD HCD NACRS NRS ODB OHP OMHRS RAICA RAHC SDS ASTHMA CHF COPD HIV HYPER OCC ODD OMD ORAD CONTACT RPDB DEMENTA ORGD ADP SAFE Unit |
| 4 | Evaluating the Effect of Sentinel Lymph Node Procedures on Goin Node Dissection Rates in Women with Invasive Vulvar Cancer in Ontario | IPDB DAD NACRS OHP RPDB OCR |

| # | Project Title | ICES Data |
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| 41 | Evaluating the impact of Ontario's new PSA testing policy | LHN CCRS DAD HCD NACRS NRS ODB OHP OMHRS SDS RPDB ADP OCR OLIS |
| 42 | Evaluating the impact of primary care reforms in Ontario on the quality of care and health service use of persons with dementia | CPDS JPDB DIN DIN PCCF AVGPRICE CCRS DAD HCD NACRS NRS ODB OHP OMHRS SDS ASTHMA CHF COPD HYPER ODD CENSUS CONTACT POP RPDB ADP CAPE GAPP OHCAS OCCI ORGO ESTSOB RAHC |
| 43 | Evaluating the impact of selected antibiotic stewardship interventions on Clostridium difficile infection incidence in Ontario long term care facilities | JPDB DIN PCCF REF AVGPRICE ESTSOB DAD NACRS ODB OHP SDS CHF COPD HYPER ODD OMD CENSUS CONTACT RPDB OLIS |
| 44 | Evaluating the Impact of the Healthy Kids Community Challenge (HKCC) on Healthy Weights Using the EMERALD | JPDB DAD NACRS OHP OMHRS SDS ASTHMA ODD CENSUS RPDB CC EMERALD ETHNIC Healthy Kids Community Challenge past codes MOMBABY OCC CONTACT CAPE |
| 45 | Evaluating the integration of Indigenous Healing with principals of Seeking safety for treatment of Indigenous patients with substance use disorder | DIN DAD NACRS ODB OHP CHF HYPER ODD OMD CONTACT RPDB ALR OCR ORGO Berbowopka Data Records Berbowopka IHSS Dataset |
| 46 | Evaluation of "real-world" clinical and economical outcomes of catheter-based atrial fibrillation ablation | DIN LHN PCCF REF AVGPRICE CCRS DAD HCD NACRS NRS ODB OHP OMHRS SDS COPD HYPER ODD RPDB ADP CAPE GAPP OHCAS OCCI CCN CHF |
| 47 | Evaluation of 2017/18 Surge Bed Strategy | DAD OHP SDS RPDB OCR DCIS_original DCIS_genomic |

| # | Project Title | ICES Data |
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| 48 | Evaluation of a rapid assessment outpatient heart failure clinic and its impact on hospital admissions and emergency room visits | DAD OHP SDS RPDB NACRS IFDB CHF HYPER ODD OLIS ORGO Rapid HF |
| 49 | Evaluation of fair quality policies | DAD NACRS ODB OHP SDS ASTHMA CHF COPD HYPER ODD OMD CENSUS CONTACT RPDB NPHS ONMARG ORGO OCR OPHECE |
| 50 | Evaluation of geriatric trauma in Ontario | CPDB LHIN INST CCRS CPRO DAD HCD NACRS ODB OHP RAICA RAIHC RPDB OTR NRS ONMARG PCCF OMHRS |
| 51 | Evaluation of Health Links in the Southeastern Local Integration Network (LHIN) | PCCF INST AVGPRICE ESTSOB CCRS CORR DAD HCD NACRS NRS ODB OHP OMHRS SDS CONTACT RPDB ADP CAPE GAPP OCCL OHCAS Data from three Health Links: Rideau Tay, Quinte, Kingston |
| 52 | Evaluation of patient-reported outcomes in GI cancer: A population-level analysis of patient-reported symptom burdens | LHIN INST CCRS DAD HCD NACRS ODB SDS CENSUS RPDB ONMARG ALR OCR symp PCCF NRS ONMARG |
| 53 | Evaluation of Quantity and Quality of Services under Different Physician Payment Models | CPDB IFDB LHIN PCCF AVGPRICE DAD NACRS OHP SDS ASTHMA CHF COPD HIV HYPER ODD OMD ORAD CENSUS CONTACT RPDB CAPE GAPP ONMARG |

| # | Project Title | ICES Data |
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| 6 | Evaluation of robotic surgery in Ontario | CPDB IPDB LHN INST DAD HCD NACRS NRS ODB OHP SDS RPDB ONMARG ALR OCR ORGO AVGP/ICE CCRS OMHRS ADP CAPE GAP P OCC1 misc CHF COPD HYPER ODD OMD OLS ESAS |
| 6 | Evaluation of the benefit of stress testing after presentation to the emergency department with chest pain | CPDB IPDB DN LHN INST DAD HCD NACRS ODB OHP SDS ASTHM A CHF COPD HYPER ODD CONTACT PDP RPDB |
| 6 | Evaluation of the Generic Valsartan Recall in Ontario | CPDB IPDB DN LHN PCCF REF AVGP/ICE ESTSOB CCRS DAD HCD NACRS NRS ODB OHP OMHRS SDS HY CENSUS RPDB ADP CAPE GAPP OCC1 OHCAS ALR NDPP OCR ORGO Public Health Ontario Laboratory HCV Records |
| 6 | Evaluation of the Impact of Primary Care Heart Failure Billing codes on Clinical Outcomes | IPDB PCCF CCRS DAD HCD NACRS OHP RAICA RAHC SDS CHF COPD HYPER ODD RPDB CAPE OCR DN LHN REF AVGP/ICE ESTSOB CORR NRS ODB OMHRS |
| 6 | Evaluation of the Modernization of the Homes for Special Care in London, Ontario | LHN PCCF REF INST DAD NACRS OHP OMHRS CENSUS CONTACT RPDB 1) 2019-02-06 CHO for ICES 2) 2019-02-06 HSC for ICES |

| # | Project Title | ICES Data |
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| 43 | Evaluation of utilization of services before, during, and after outpatient rehab using data from NACRS Clinic Life | CPDB IPDB AVGPRICE STDRIC E CCRS DAD HCD NACRS NRS ODB OHP OMHRS RAICA RAHC SDS ORAD CONTACT RPDB ADP CAPE GAPP OHCAS OCCI NACRS Clinic Life |
| 44 | Evaluation to Action - Integrating the voices of Aboriginal children | CPDB IPDB LHIN DAD NACRS ODB OHP OMHRS CENSUS RPDB CAPE MOMBABY |
| 45 | Evaluations, interventions and outcomes of patients with syncope and chronic kidney disease (CKD) | IPDB DN PCCF REF CRRR DAD NACRS ODB OHP SDS CONTACT RPDB GDML |
| 46 | Examinations of geospatial factors on health care use and access by older Ontarians (GIS and aging) | CPDB IPDB DN LHIN PCCF INST AVGPRICE STDRIC E CCRS CPRO DAD HCD NACRS NRS ODB OHP OMHRS RAICA RAHC ASTHMA CHF COPD HIV HYPER ODD OMD ORAD POP RPDB CAPE Environment Canada - Daily Weather Physician Travel Time |
| 47 | Examining advanced maternal age and severe maternal morbidity: What is the role of socioeconomic context? | IPDB DIN LHIN REF INST DAD NACRS ODB OHP SDS ODD CENSUS CONTACT POP RPDB ONMARG |
| 48 | Examining caregiver distress and outcomes of seniors in home care - a population-based study | LHIN DAD NACRS OHP OMHRS RPDB CBI CIC |
| 49 | Examining hormone usage prior to last follow up as a surrogate for prostate cancer treatment failure/success | DIN LHIN PCCF AVGPRICE ESTSOB DAD NACRS ODB OHP SDS CENSUS CONTACT POP RPDB POPCAN ORGD ALR NDIP OCR |

| # | Project Title | ICES Data |
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| 4 | Examining places of care at the end of life among immigrants and non-immigrants: a population-based study | DN LHN PCCF INST AVGP/ICE ESTS/OB CCRS DAD HCD NACRS NRS ODB OHP OMHRS RAHC SDS ASTHMA CHF COPD HV HYPER OCC ODD OMD ORAD CONTACT RPDB ADP CAPE GAPP DEMENTIA ORGD CIC |
| 4 | Examining sex-based differences of depression before acute myocardial infarction | CPDB IPDB LHN PCCF REF INST DAD NACRS OHP OMHRS SDS ASTHMA CHF COPD HV HYPER ODD OMD ORAD CONTACT POP RPDB ONMARG OCR |
| 4 | Examining the association between lithium levels and poor renal outcomes in older lithium users, PHASE II | PCCF REF CCRS CORR DAD NACRS ODB OHP OMHRS SDS CONTACT RPDB OLS ORRS TGLN |
| 4 | Examining the effects of low back pain and mental health symptoms on health care utilization and costs | CPDB AVGP/ICE ESTS/OB CCRS DAD HCD NACRS NRS ODB OHP OMHRS SDS ASTHMA CHF COPD HYPER ODD OMD ORAD CENSUS POP RPDB ADP CAPE GAPP OCC ONMARG ORGD CCHS OCR |
| 4 | Examining the impact of sociodemographic, lifestyle and medical conditions on lipid levels using the CANHEART cohort | CPDB IPDB DN LHN PCCF REF AVGP/ICE CORR DAD NACRS ODB OHP OMHRS SDS ASTHMA A CHF COPD HYPER ODD CENSUS POP RPDB CAPE CCHS CIC ETHNIC OCR GDML OLS HV PHYSNET |

| # | Project Title | ICES Data |
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| 41 | Examining which creatinine-based equations should be used in routine care practice to better predict hyperkalemia | IPDB DN LHN PCCF REF CORR DAD NACRS ODB OHP OMHRS SDS CENSUS CONTACT POP RPDB OLS CERNER Center Height and Weight Values |
| 42 | Exploring all-cause and cause-specific mortality trends among First Nations in Ontario - OPTIMISE project | PCCF REF DAD NACRS OHP ASTHM A CHF COPD HYPER OCC ODD OMD ORAD CENSUS RPDB OHCAS ONMARG OTR OCR ORGO IRS POP CONTACT |
| 43 | Exploring Causal Models in Healthcare Data | CPDB IPDB DN LHN PCCF REF INST CCRS DAD HCD HOBIC NACRS NRS ODB OHP OMHRS RAICA RAIHC SDS ASTHM A CHF COPD HIV HYPER MOMBABY OCC ODD OMD ORAD CENSUS CONTACT POP RPDB HCES ADP CAPE CENSUSDA EMERALD OCHS OCR PCPOP |
| 44 | Exploring the health profiles of populations in Ontario Works (OW) and Ontario Disability Support Program (ODSP) using linkage of MCSS data | IPDB DN PCCF CCRS DAD HCD NACRS NRS ODB OHP OMHRS SDS ASTHM A CHF COPD HIV HYPER OCC ODD OMD ORAD CENSUS CONTACT RPDB MCSS |
| 45 | External validation of a post-surgery AKI prediction model using Ontario data | CORR DAD NACRS OHP SDS RPDB OLS |
| 46 | EXTERNAL VALIDATION OF GILBERT'S HOSPITAL FRALTY RISK SCORE (HFRS) | DN REF INS T AVGPINCE ESTSOB CCRS DAD NACRS NRS ODB OHP OMHRS SDS CHF HYPER ODD RPDB ADP CAPE GAPP HCDMOH OCC OHCAS |

| # | Project Title | ICES Data |
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| 47 | External validation of HOMR - now! | DAD NACRS ODS OHP SDS RPDB UHNDData |
| 48 | Extreme ambient temperature and hypoglycemia | DIN LHN DAD NACRS ODS OHP CHF COPD HYPER ODD POP RPDB ONMARG GEMSURF AQHI |
| 49 | Ezetimibe use after myocardial infarction in older adults | OLS |
| 48 | Factors associated with early physician follow-up of patients with COPD after hospital discharge | RPDB PCCF OHP DIN ODS PCPOP |
| 48 | Factors influencing newborn outcomes among women with schizophrenia | DIN DAD NACRS ODS OHP OMHRS ASTHM ACHF COPD HV HYPER MOMBABY ODD RPDB BORN |
| 48 | Factors related to declining health with cystic fibrosis (CF) | RPDB DIN PCCF REF CORR DAD HCD NACRS ODS OHP SDS CONTACT RPDB OHCAS Canadian Cystic Fibrosis Registry |
| 48 | Falls among LTC residents with dementia co-prescribed cholinesterase inhibitors and cardiac rate control agents | CPDB RPDB DIN PCCF INST CCRS DAD HCD NACRS ODS OHP OMHRS CHF HYPER ODD ORAD CONTACT RPDB |
| 48 | Feasibility Study: Determining Eligibility for the ECAD trial using EMERALD | RPDB DIN LHN PCCF REF INST DAD NACRS ODS OHP SDS ODD ORAD CENSUS CONTACT POP RPDB ONMARG |
| 48 | Feedback to Improve Rational Strategies of Antibiotic Initiation and Duration in Long Term Care (FIRST AID - LTC) | LHN PCCF REF INST CCRS DAD NACRS NRS OMHRS SDS CONTACT RPDB FIRST AID LTC CPSO Numbers and Additional Physician Information |
| 48 | FERTILITY CONSULTATION PATTERNS IN PATIENTS AND SURVIVORS OF CANCER IN ADOLESCENCE AND YOUNG ADULT LIFE | RPDB LHN PCCF REF DAD OHP RPDB AIR OCR CPSO physician number |

| # | Project Title | ICES Data |
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| 4 | Fibrate Use in Diabetic Retinopathy in Ontario | PDB DN PCCF REF DAD NACRS ODB OHP SDS CHF HYPER ODD CENSUS CONTACT RPDB OUI |
| 4 | Field implementation of the aortic device in STEMI (the FIRST study) - Costeffectiveness | DIN REF AVSP/ICE CCRS DAD HCD NACRS NRS ODB OHP OMHRS SDS HYPER ODD CONTACT RPDB ADP CAPE GAPP OHCAS OCCI FRST |
| 4 | Firearm injuries among children and youth in Ontario | PCCF INST AVSP/ICE ESTSOB CCRS DAD HCD NACRS NRS ODB OHP OMHRS SDS CENSUS RPDB ADP CAPE GAPP OCCI OHCAS ORGD CIC ONMARG |
| 4 | First contact in ED as evidence of poor access to ambulatory mental health care in a universal health care system | g98a2g |
| 4 | First Nations Aging Study | PCCF REF DAD NACRS ODB OHP RAHC ASTHM A CHF COPD HIV HYPER ODD OMD ORAD RPDB OHCAS OTR OCR IRS CPRO HCD |
| 4 | Five year mortality rates and causes among adults discharged from Ontario Shores Centre for Mental Health Sciences | LHN PCCF REF INST DAD OHP CENSUS CONTACT POP RPDB ONMARG ORGD CIC OMHRS |
| 4 | Flexible modeling of the effect of time-dependent glucocorticoid exposure on fracture risk | DIN REF DAD NACRS ODB OHP ASTHMA COPD OCCC RPDB DIN REF CCRS DAD NACRS ODB OHP ODD |
| 4 | Follow up patterns of pediatric mental health Emergency Department visits: a retrospective cohort study | PDB LHN PCCF INST DAD NACRS ODB OHP OMHRS CENSUS RPDB CAPE ONMARG CIC ORGD g98a2g |

| # | Project Title | ICES Data |
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| 4 | Forensic Mental Health Care: Health outcomes, Service Utilization and cost | IPDB LHN PCCF AVGP/ICE ESTSOB CCRS CORR DAD HCD NACRS NRS ODB OHP OMHRS SDS ASTHMA CHF COPD HIV HYPER MOMBABY OCCC ODD OMD ORAD CENSUS RPDB ADP CAPE CIC OCR ORGO %getag |
| 4 | Forensic Mental Health Care: Health outcomes following first forensic hospitalization | IPDB LHN PCCF AVGP/ICE ESTSOB CCRS CORR DAD HCD NACRS NRS ODB OHP OMHRS SDS ASTHMA CHF COPD HIV HYPER MOMBABY OCCC ODD OMD ORAD CENSUS RPDB ADP CAPE CIC OCR ORGO %getag |
| 4 | Frailty, Dementia and Health Outcomes in Community-Based Older Adults | CPDB IPDB DN PCCF AVGP/ICE CCRS DAD HCD NACRS NRS ODB OHP OMHRS RAHC SDS ASTHMA CHF COPD HYPER ODD OMD ORAD CENSUS CONTACT RPDB ADP CAPE GAPP ONCAS ONMARG OCCI |
| 4 | Frequency and trends of acquired brain injury (including concussion) occurrence across LHNs (Update 2016) | IPDB LHN PCCF REF AVGP/ICE STDP/ICE E CCRS DAD HCD NACRS NRS ODB OHP OMHRS SDS RPDB OCR |
| 4 | Frequency of ANA testing in Ontario - Are we choosing wisely? | EMERALD |
| 4 | Frequency of follow-up services before and after eliminating a financial incentive for chronic disease management by internal medicine specialists | CPDB IPDB LHN PCCF REF INST OHP CENSUS POP RPDB |

| # | Project Title | ICES Data |
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| 31 | Frequency of psychiatric outpatient follow-up and ambulatory health care system costs in Ontario | LHN PCCF REF INST DAD NACRS OHIP SDS ASTHMA MOMBABY CENSUS CONTACT POP RPDB ONMARG CCHS |
| 32 | From Patient to Policy: Using data to drive TB elimination in Canada's foreign born population | IPDB LHN INST DAD NACRS OHIP SDS OCCC RPDB ERCLAIM CENSUSCA ONMARG CIC CENSUS CONTACT ONMARG ALR CIC NDPP OCR ORGO %getag ORRS Positive TB cases from PHO Lab Data years 2014-2016 TB data from IPHIS years 1998-2016 TB data from IPHIS years 1998-2016 Dataset 1: Country_BCG_Policy Dataset 2: WHO CIC Crosswalk WHO_TB_Burden_countries |
| 33 | Funding Equity for Persons with Mental Illness under Primary Care Reform in Ontario | CPDB IPDB LHN PCCF AVGPRICE STDPRIC ECCRS DAD NACRS NRS ODB OHIP OMHRS SDS ASTHMA COPD HYPER ODD CENSUS CONTACT POP RPDB CAPE GAPP ONMARG |
| 34 | Fungal Infection in Solid Organ Transplant and Hematopoietic Stem Cell Transplant Recipients in Ontario | IPDB DIN LHN PCCF REF INST CORR DAD NACRS ODB OHIP OMHRS HYPER ODD CONTACT RPDB ORRS |
| 35 | GANs for Natural Language | CPDB IPDB DIN LHN PCCF REF INST CCHS DAD HCD HOBIC NACRS NRS ODB OHIP OMHRS RAICA RAHC SDS ASTHM ACHF COPD HV HYPER MOMBABY OCCC ODD OMD ORAD CENSUS CONTACT POP RPDB HCES ADP CAPE CENSUSCA EMERALD CCHS OCR PCPOP |

| # | Project Title | ICES Data |
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| 33 | Gastric Adenocarcinoma: Study of Trends in Ontario (GASTRO) | PCCF REF DAD NACRS OHP MCMBABY CENSUS RPDB BORN Surveillance, Epidemiology and End Results (SEER) registry |
| 37 | Gastric Cancer risk and screening among immigrants | PCCF DAD OHP CENSUS RPDB CIC OBSP OCR |
| 38 | Gender discrepancies in asthma diagnosis, management, morbidity and mortality outcomes | IPDB DIN DAD NACRS ODB OHP OMHRS SDS ASTHM A CHF COPD HYPER OCC ODD OMD ORAD CENSUS CONTACT POP RPDB ONMARG CCHS OCR ORGD |
| 39 | Gender disparities in early childhood health and health care by maternal country of origin | CPDB DAD NACRS OHP MCMBABY CENSUS RPDB CIC OCR CHC |
| 39 | Geographic disparities in the survival of head and neck cancer patients | LHN PCCF DAD NACRS OHP OMHRS SDS ASTHMA CHF HIV HYPER ODD CENSUS RPDB ONMARG ORGD Correctional Service Canada Data ODB CAPE ALR CCRS HCD RADA RAHC |
| 39 | Geographic distribution of unattached patients in Ontario | LHN PCCF CONTACT RPDB PCPOP |
| 39 | Geographic variation in the treatment of pancreas cancer in Ontario | LHN PCCF INST CCRS DAD HCD NACRS ODB OHP SDS CENSUS RPDB ALR CIC NDIP OCR ESAS |
| 39 | Geriatric-Focused Care in Ontario: What Billing Codes Tell us about Physician Practice Patterns | CPDB IPDB DIN LHN PCCF REF HCD OHP RPDB CAPE |

| # | Project Title | ICES Data |
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| 34 | Glioblastoma treatment, resource utilization and outcomes in Ontario | IPDB DIN LHN PCCF REF INST DAD HCD NACRS NRS OOB OHP SDS CENSUS CONTACT POP RPDB HCDMDH OHCAS ONMARG ORGD HYPER ODD |
| 35 | Glucocorticoid administration and diabetes in adults with hematological malignancies: A population-level retrospective cohort study | DAD NACRS OOB OHP ODD RPDB ONMARG ALR OCR %getag CPDB IPDB DIN LHN PCCF REF INST SDS CENSUS CONTACT POP OLS |
| 36 | Glycemic control in Ontario patients with diabetes | IPDB PCCF DAD NACRS OOB OHP SDS HYPER ODD RPDB CIC ETHNIC OLS PCPOP ADP |
| 37 | Gonorrhea Test of Cure Compliance in Ottawa | OHP RPDB Ottawa Public Health Gonorrhea Case List |
| 38 | Hamilton low acuity emergency department use study AHRQ | CPDB IPDB PCCF NACRS OHP CONTACT RPDB CAPE ESTSOB PCPOP |
| 39 | Harnessing population-based data on HIV pre-exposure prophylaxis use to improve community-based outreach to at-risk youth in Ontario | IPDB DAD NACRS OOB OHP ASTHMA ODD CENSUS CONTACT RPDB ONMARG CIC CPDB OMHRS OLS |
| 40 | Health and health care of Francophones in Ontario: does language matter? | PCCF INST DAD NACRS SDS RPDB OCCC ORAD ONMARG ORGD DEMENTIA |
| 41 | Health Care Expenditures of Psychosis (HCEP) in Ontario: An Analysis over Time | IPDB DIN LHN PCCF REF INST AVGP/RE ESTSOB CORR DAD NACRS OOB OHP OMHRS SDS ASTHMA CHF COPD HIV HYPER ODD ORAD CENSUS CONTACT POP RPDB CAPE OLS ETHNIC CORR %getag |

| # | Project Title | ICES Data |
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| 32 | Health Care Resource Utilization in Interstitial Lung Disease | CPDB IPDB DIN LHN PCCF REF INST CORR DAD HCD NACRS NRS ODB OHP SDS ASTHM ACOPD ODD RPDB Interstitial Lung Disease Database |
| 33 | Health care utilization among homeless adults; patterns and predictors of high cost users of the health care system | DIN LHN PCCF REF AVGP/ICE ESTS/OB CCRS CORR CPRO DAD HCD HOBIK NACRS NRS ODB OHP OMHRS RAICA RAIHC SDS RPDB ADP CAPE GAPP OCCI OHCAS CENSUS CONTACT POP ONMARG ORGO OCR Health and Housing in Transition At Home Chez |
| 34 | Health care utilization and cost for Casey House patients compared to others living with HIV | CPDB IPDB AVGP/ICE CCRS DAD HCD NACRS NRS ODB OHP OMHRS SDS ASTHMA CHF COPD HYPER ODD CONTACT RPDB ADP CAPE GAPP OHCAS OCCI ORGO DIN HW |
| 35 | Health care utilization and costs associated with azacitidine therapy for higher-risk myelodysplastic syndromes | 1) Cancer Care Ontario registry of patients with myelodysplastic syndromes treated with azacitidine |
| 36 | Health care utilization in adolescents and young adults before first diagnosis of psychotic disorder | CPDB IPDB DIN LHN PCCF REF INST CCRS DAD HCD HOBIK NACRS NRS ODB OHP OMHRS RAICA RAIHC SDS ASTHM ACHF COPD HW HYPER MOMBABY OCCC ODD QMD ORAD CENSUS CONTACT POP RPDB HCES ADP CAPE CENSUSDA EMERALD CCHS OCR PCPOP |

| # | Project Title | ICES Data |
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| 37 | Health care utilization patterns of Clinical Teaching Unit Patients | CPDB #PDB DN PCCF REF INST AVG/PCE ESTSOB CCRS DAD HCD NACRS NRS ODB OHP OMHRS SDS ASTHMA CHF COPD HYPER ODD OMD ORAD CONTACT RPDB CAPE GAPP CCCI OHCAS ONMARG NMS ASTHMA CHF COPD HYPER ODD OMD OHC ONMARG CTU visits |
| 38 | Health disparities among children and youth with mental health and complex care needs in ChamplainLHIN - OHT's support | #PDB LHIN PCCF REF INST DAD HCD NACRS ODB OHP OMHRS ASTHMA ODD CENSUS CONTACT POP RPDB ADP ONMARG OCR CIC |
| 39 | Health inequity reporting initiative: an update of the Ontario Marginalization Index | PCCF CENSUS POP RPDB CIC ETHNIC |
| 40 | Health Measures and Prevention Indicators by Ottawa Neighborhood | #PDB LHIN PCCF DAD NACRS OHP OMHRS SDS ASTHMA CHF COPD HYPER ODD OMD CENSUS CONTACT RPDB CAPE OBSP OCR ORGD Ottawa_Neighborhood_study_weight_file_clean & ONS Neighbourhood Name & ID with pop Champlain sub-sub region census denominators Ottawa neighbourhood census denominators |
| 41 | Health outcomes in children of mothers who received influenza vaccination during pregnancy | PCCF DAD NACRS OHP RPDB BORN |
| 42 | Health Outcomes in the Pre-Eclampsia New Emerging Team (PE-NET) Cohort 8-14 Years after Index Pregnancy | #PDB PCCF REF DAD NACRS OHP SDS CHF HYPER MCMBABY ODD OMD CONTACT RPDB ONMARG ORGD PreEclampsia New Emerging Team (PE-NET) Cohort |
| 43 | Health outcomes of a cardiovascular rehabilitation and secondary prevention services program (CRSP) in the Central East LHIN | DAD NACRS OHP SDS CHF RPDB RV-CVIS |
| 44 | Health Quality Ontario (HQP) Hospital based performance reporting | CPDB #PDB DN LHIN PCCF |

| # | Project Title | ICES Data |
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| 25 | Health Quality Ontario (HCO) Implementation Laboratory - Optimizing Audit and Feedback by Testing Approaches for Designing Practice Reports | IPDB DIN INST CCRS DAD NACRS NRS ODB OHP OMHRS RAICA RAHC RPDB LHIN PCCF AVGPRICE STDPRI HCD CENSUS POP ADP CAPE |
| 26 | Health Quality Ontario (HCO): Anxiety Disorder Quality Standard | PCCF INST DAD HCD NACRS OHP OMHRS SDS CENSUS POP RPDB CCHS |
| 27 | Health Quality Ontario (HCO): Chronic Pain Quality Standard | DIN LHIN PCCF AVGPRICE STDPRI E CCRS DAD HCD NACRS ODB OHP RAHC SDS CENSUS POP RPDB CCHS |
| 28 | Health Quality Ontario (HCO): Heart Failure Care in the Community Quality Standard | DIN LHIN PCCF AVGPRICE STDPRI E CCRS DAD NACRS ODB OHP SDS CHF RPDB PHYSNET CENSUS POP HCD RAHC |
| 29 | Health Quality Ontario (HCO): Low Back Pain (LBP) Quality Standards | DIN LHIN PCCF DAD NACRS ODB OHP SDS RPDB PHYSNET |
| 30 | Health Quality Ontario (HCO): Access to Specialists in Ontario | CPDB IPDB DIN PCCF REF INST DAD NACRS ODB OHP OMHRS SDS CENSUS CONTACT RPDB |
| 31 | Health Quality Ontario (HCO): Asthma Quality Standard | CPDB IPDB DIN LHIN PCCF INST CCRS DAD HCD NACRS NRS ODB OHP OMHRS SDS ASTHM A COPD CENSUS POP RPDB OUS ONMARG POPCAN |
| 32 | Health Quality Ontario (HCO): COPD Quality Standard | PHYSNET |

| # | Project Title | ICES Data |
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| 36 | Health Quality Ontario (HCO): COPD Quality Standard | LHN PCCF CCRS DAD HCD NACRS NRS ODB OHP RAICA RAHC SDS COPD RPDB ADP PHYSNET |
| 37 | Health Quality Ontario (HCO): Diabetes Quality Standard | CPDB IFDB DN LHN PCCF INST CCRS DAD HCD NACRS NRS ODB OHP OMRS SDS HYPER ODD CENSUB POP RPDB OLIS ONMARG POPCAN MOMBABY |
| 38 | Health Quality Ontario (HCO): Early Pregnancy Complications and Loss Quality Standard | CPDB IFDB DN LHN PCCF DAD NACRS ODB OHP OMRS SDS MOMBABY CENSUB POP RPDB ONMARG POPCAN |
| 39 | Health Quality Ontario (HCO): General surgeon reports | CPDB IFDB DN LHN PCCF REF INST DAD NACRS ODB OHP OMRS SDS CONTACT POP RPDB NMS |
| 40 | Health Quality Ontario (HCO): Glaucoma Quality Standard | CPDB IFDB DN LHN PCCF DAD NACRS ODB OHP OMRS SDS CENSUB POP RPDB ONMARG POPCAN |
| 41 | Health Quality Ontario (HCO): Hospital based performance reporting | REF INST DAD NACRS ODB OHP SDS POP RPDB CPDB IFDB DN LHN PCCF |
| 42 | Health Quality Ontario (HCO): Hypertension Quality Standard | CPDB IFDB DN LHN PCCF INST CCRS DAD HCD NACRS NRS ODB OHP OMRS SDS HYPER ODD CENSUB POP RPDB OLIS ONMARG POPCAN |

| # | Project Title | ICES Data |
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| ☒ | Health Quality Ontario (HOO): Opioid prescribers report | CPDB IPDB DIN PCCF CCRS DAD HCD NACRS ODB OHP OMHRS RAHC RPDB NMS |
| ☒ | Health Quality Ontario (HOO): Orthopaedic surgeon reports | CPDB IPDB DIN LHN PCCF REF INST DAD NACRS ODB OHP OMHRS SDS CONTACT POP RPDB NMS MyPractice Orthopaedic surgeon consenting physician list (at ICES) |
| ☒ | Health Quality Ontario (HOO): Quality Standards Program | CPDB IPDB DIN LHN PCCF INST CCRS DAD HCD NACRS NRS ODB OHP OMHRS SDS ASTHM ACHF COPD HYPER ODD CENSUS POP RPDB QLS ONMARG POPCAN NMS |
| ☒ | Health Quality Ontario (HOO): Transitions in Care Quality Standard | CPDB IPDB DIN LHN PCCF INST CCRS DAD HCD NACRS NRS ODB OHP OMHRS SDS ASTHM ACHF COPD HYPER MOMBABY ODD CENSUS POP RPDB QLS ONMARG POPCAN |
| ☒ | Health Quality Ontario (HOO): Yearly Report | IPDB CCRS CPRO DAD HCD NACRS NRS ODB OHP OMHRS SDS MOMBABY ODD POP RPDB CCHS NMS CIC AVGPRICE ESTSOB ORGO |
| ☒ | Health Service Needs and Use for NELHN Residents | IPDB PCCF REF AVGPRICE ESTSOB CCRS DAD HCD NACRS NRS ODB OHP OMHRS SDS CONTACT RPDB ADP GAPP OCCI |
| ☒ | Health Service Outcomes of Self-Harming Children and Youth Presenting to Emergency Departments | ORGO |

| # | Project Title | ICES Data |
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| 31 | Health Service Use and Costs of People Using Assistive Devices | #PDB PCCF AVGP/RE CCRS DAD HCD NACRS NRS ODB OHP OMHRS SDS ASTHMA CHF COPD HYPHER ODD OMD RPDB ADP ONMARG OCR |
| 32 | Health service utilization among people who had undergone ostomy related surgeries | CPDB #PDB LHIN PCCF REF INST DAD HCD NRS OHP SDS CONTACT POP RPDB CAPE |
| 33 | Health service utilization among social housing residents in Ontario: a feasibility analysis for a community programming trial | LHIN PCCF REF INST DAD NACRS OHP SDS CHF COPD HYPHER ODD CENSUS CONTACT POP RPDB ONMARG DN ODB |
| 34 | Health Services Use and Multimorbidity - Self-report vs Admin Data | CENSUS CONTACT OCC RAICA RAHC |
| 35 | Health status and behaviours of residents of the Simcoe Muskoka District Health Unit | #PDB DN PCCF DAD NACRS NRS ODB OHP OMHRS SDS ASTHM A CHF COPD HYPHER ODD RPDB OBSP OCR ESTSO R CENSUS POP CAPE NMS PCPOP |
| 36 | Health status profile in Northwestern Health Unit | 2016 Census Ref. 20_SML Custom Geo a No Exclusions #PDB LHIN DAD HCD NACRS NRS ODB OHP OMHRS SDS ASTHMA CHF COPD HYPHER MOMBABY ODD OMD RPDB PCCF REF |
| 37 | Health system evaluation of the gap in treatment for the delivery of opioid agonist treatments in Ontario | Band Classification Manual DN LHIN PCCF AVGP/RE ESTSOB CCRS DAD HCD NACRS NRS ODB OHP OMHRS SDS CENSUS CONTACT POP RPDB ADP CAPE GAPP OCC1 OHCAS NMS PCPOP CHC ONMARG PROUD cohort |

| # | Project Title | ICES Data |
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| 34 | Health utilization and economics of melanoma care in Ontario | CPDB #PDB DN LHN PCCF REF NST AVGPRCE ESTSOB CCRS DAD HCD NACRS NRS ODB OHP OMHRS RAIDA RAHC SDS CENSUS CONTACT POP RPDB ADP CAPE GAPP MS OCCI OHCAS ALR NDIP OCR ESAS Melanoma Platform |
| 35 | Healthcare pathways for patients with end-stage kidney disease | #PDB LHN PCCF DAD NACRS ODB OHP SDS ASTHMA CHF COPD HYPER ODD CENSUS RPDB CAPE POPCN EMERALD PCPOP |
| 36 | Healthcare service utilization and barriers to care among Parkinson Disease patients in Ontario | CPDB #PDB LHN PCCF NST DAD NACRS ODB OHP SDS CENSUS POP RPDB ONMARG |
| 37 | Healthcare utilization and cost of autosomal dominant polycystic kidney disease in Ontario | CPDB AVGPRCE CCRS HCD NRS OMHRS ADP CAPE GAPP OHCAS OCCI |
| 38 | Healthcare utilization and cost of autosomal dominant polycystic kidney disease in Ontario based on mutation type | CPDB #PDB DN REF CCRS CORR DAD HCD NACRS NRS ODB OHP OMHRS SDS CONTACT RPDB ADP CAPE GDML QLS ADPKD registry |
| 39 | Healthcare Utilization and Costs After an Acute Care Hospitalization for Nursing Home Residents | CCRS CPRO DAD NACRS ODB OHP HCD NRS OMHRS ADP |
| 40 | Healthcare utilization and costs associated with current and future treatment strategies for childhood acute lymphoblastic leukemia | REF DAD RPDB Cost and Utilization in Acute Lymphoblastic Leukemia |
| 41 | Healthcare utilization for mental health concerns among survivors of testicular cancer: a population-based study | #PDB DN LHN PCCF REF NST DAD NACRS ODB OHP OMHRS SDS CONTACT RPDB ALR OCR ESAS testes_full testes_chemo |

| # | Project Title | ICES Data |
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| 32 | Healthy mothers, healthy families: Evaluating integrated treatment for pregnant and parenting women with addictions | DAD NACRS OGB OHP OMHRS MCMBABY RPDB data_bom Drug and Alcohol Treatment Information System (DATIS) |
| 33 | Heart Failure Definition Comparison | CPDB #PDB DN PCCF AVGPRICE ESTSOB DAD NACRS OGB OHP CENSUS RPDB CAPE OCCI OCR DDARD NMS |
| 34 | Heart failure in primary care practice across Ontario | #PDB DN LHN PCCF REF AVGPRICE CORR DAD NACRS OGB OHP SDS ASTHMA CHF COPD HYPER ODD CENSUS POP RPDB OLU ETHNIC ORGO CPDB CAPE |
| 35 | Heart Outcomes in Patients who are Elderly and on SGLT2 (HOPES) | DAD NACRS OHP |
| 36 | Heat warning information systems: do they protect Canadians from the effects of extreme heat? | PCCF DAD NACRS OGB OHP SDS CHF COPD ODD POP RPDB ONMARG ORGO GEMSURF |
| 37 | Help Seeking Behaviours, Access to Care and Suicide among Rural and Urban Populations in Ontario, Canada | PCCF REF CCRS DAD HCD NACRS NRS OHP CENSUS RPDB OSR |
| 38 | Helping the Missing Million in the Diagnosis and Treatment of COPD | DN DAD NACRS OGB OHP SDS COPD RPDB |
| 39 | Hematologic Malignancy Long Term Outcomes Following ICU (HEAL-ICU) | PCCF REF INST AVGPRICE CCRS DAD HCD NACRS NRS OGB OHP OMHRS SDS CHF COPD RPDB ADP CAPE OCCI OHCAS ESAS NDPP OLU ALR OCR |
| 40 | Hemoglobin A1C as a Risk Factor for Acute Kidney Injury (AKI) | #PDB DN PCCF REF CORR DAD NACRS OGB OHP SDS CONTACT RPDB OLU |

| # | Project Title | ICES Data |
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| 31 | High Cost Users of Health Care Services: Extending of Previous Findings | #PDB LHN PCCF AVGP/ICE CCRS DAD HCD NACRS NRS ODB OHP OMHRS SDS ASTHMA CHF COPD HIV HYPER OCC ODD OMD ORAD CENSUS RPDB ADP CAPE GAPP OHCAS OCC1 ALR NDPF OCR NMS |
| 32 | High Cost Users of Ontario Healthcare- Machine Learning analysis | DN LHN PCCF REF CCRS CORR DAD HCD NACRS NRS ODB OHP OMHRS RAHC SDS ASTHM A CHF COPD HIV HYPER MOMBABY OCCC ODD OMD ORAD CONTACT RPDB ADP GAPP ONMARG NDPF OCR |
| 33 | High drug-cost beneficiaries of the Ontario Public Drug Program (OPDP) | #PDB DN LHN PCCF REF AVGP/ICE CCRS DAD HCD NACRS NRS ODB OHP OMHRS SDS ASTHMA CHF COPD HIV HYPER ODD OMD ORAD RPDB ADP CAPE GAPP OHCAS OCC1 CFR OCR ESTSOB OCC PBD |
| 34 | High Energy Pelvic Fracture Management Trends in Ontario: An ICES Study | #PDB LHN PCCF REF INST DAD NACRS OHP SDS CENSUS CONTACT RPDB QIR ORGD |

| # | Project Title | ICES Data |
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| 35 | High Resource Users in ICU: Population Based Study | LHN PCCF REF AVGP/ICE ESTSOB CCRS DAD HCD NACRS NRS ODB OHP OMHRS RAHC SDS ASTHMA CHF COPD HYPHER ODD OMD CENSUS CONTACT RPDB ADP CAPE CENSUS/CA GAPP OCC1 OHCAS CCHS ORGD OCCC ORAD |
| 36 | High Risk Clinical Features for Stroke in Patients Presenting with Ongoing Dizziness | PCCF REF DAD NACRS OHP SDS RPDB OCR Project_Data_Orle |
| 37 | High Risk Clinical Features for Stroke Patients Presenting with Ongoing Dizziness | ASTHMA CHF COPD HYPHER ODD |
| 38 | High Risk Prolonged Mechanically Ventilated Patients: Outcomes and Costs | LHN PCCF INST AVGP/ICE ESTSOB CCRS DAD HCD NACRS NRS ODB OHP OMHRS RAHC SDS ASTHMA CHF COPD HYPHER ODD OMD RPDB The Ottawa Hospital Provent14 Performance Measures Provent14 Performance Measures |
| 39 | High versus low dose opioid prescribing intensity and risk for long-term opioid use following surgery | IPDB DN PCCF REF CORR DAD NACRS ODB OHP SDS ASTHMA ACHF COPD HV HYPHER ODD OMD ORAD CENSUS RPDB CPDB CCRS HCD NRS ODB RAICA RAHC |
| 40 | High-sensitivity cardiac troponin testing and population health outcomes | CPDB DN LHN PCCF REF CCRS DAD HCD NACRS NRS ODB OHP OMHRS SDS ASTHMA ACHF COPD HYPHER OCCC ODD OMD ORAD CENSUS CONTACT POP RPDB CAPE CCHS CPDB DAD OHP OMHRS RPDB IPDB INST SDS COPD 1 Troponin Observational study in the Emergency Setting (TOES study) ROM- Determining the Optimum Treatment Cutoffs for Cardiac Troponin Assays in Patients Presenting to the Emergency Department with Suspected Cardiac Ischemia Clinical Chemistry testing in a Cancer population (Cancer) |

| # | Project Title | ICES Data |
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| 31 | Hip and Knee Bundled Care Evaluation | PDB LHN PCCF AVGP/ICE ESTSOB CCRS DAD HCD NACRS NRS OSB OHP OMHRS SDS CONTACT RPDB ADP CAPE GAPP OCCI ONCAS ASTHMA CHF COPD HYPER OCCC ODD OMD ORAD DEMENTIA |
| 32 | HIV in Ontario First Nations | PCCF DAD NACRS OHP SDS ASTHMA CHF COPD HIV HYPER MOMBABY ODD RPDB IRS |
| 33 | HIV prevalence, access to care and treatment in people in provincial correctional facilities in Ontario | DAD NACRS OSB OHP OMHRS HIV RPDB ONMARG MCSCS OHC PCCF INST ASTHMA CHF COPD HYPER ODD |
| 34 | Home care clients within primary care practices, and the association between primary care practice visits and same day emergency department use | CPDB PDB DIN LHN PCCF REF CCRS DAD HCD HOBIC NACRS NRS OSB OHP OMHRS RAICA RAIRC SDS CENSUS CONTACT RPDB CAPE ONMARG |
| 35 | Home care use for spinal cord injury (SCI) | DAD HCD NRS RPDB |
| 36 | Hospital Admissions of Children/Youth Who Live with Ventilatory Support | LHN DAD HCD NACRS OHP SDS RPDB ADP |
| 37 | Hospital Productivity and Patient Mortality: A Study of Ontario's Health Services Restructuring | INST CCRS DAD NRS OSB OHP RPDB flushot |
| 38 | Hospital use by people with a mental health condition (IDEAS) | PCCF DAD NACRS OMHRS RPDB CAPE ONMARG ASTHMA CHF COPD ODD OMD |
| 39 | How health factors predict longevity in older women and men; a cohorts study following low-cost health system users | PDB DAD NACRS OHP ASTHMA CHF COPD HYPER ODD RPDB EMERALD CIC |

| # | Project Title | ICES Data |
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| 1 | H-SOAP: Effectiveness of immediate versus delayed access to hospital-based addiction services for opioid and alcohol addicted patients | OMHRS SDS RPDB |
| 2 | HSPRN Health Links Evaluation | CPDB #PDB DN PCCF AVG/PNCE ESTSOB CCRS DAD HCD NACRS NRS ODB OHP OMHRS RAHC SDS ASTHMA CHF COPD HYPER OCCC ODD OMD ORAD CENSUS CONTACT RPDB ADP CAPE GAPP OCCI OHCAS ONMARG |
| 3 | HSPRN population health characteristics and high-cost users | PCCF REF CCRS DAD NACRS NRS ODB OHP CENSUS RPDB |
| 4 | Hydrochlorothiazide use and the risk of skin cancer | CPDB #PDB DN PCCF REF DAD NACRS ODB OHP OMHRS SDS CHF COPD HV HYPER ODD CENSUS RPDB ORGO OCR |
| 5 | Hydrochlorothiazide vs Chlorothalidone | #PDB DN PCCF REF CORR DAD NACRS ODB OHP SDS CONTACT RPDB OLIS |
| 6 | Hyperkalemia in patients with normal or reduced eGFR, Part 1 | PCCF REF CORR DAD NACRS ODB OHP CONTACT RPDB OLIS |
| 7 | Hypertrophic Cardiomyopathy related sudden cardiac death in young persons in Ontario | RPDB ORGO ICD |
| 8 | Hyponatremic Overcorrection in Ontario Hospitals | CORR DAD NACRS ODB OHP OLIS |
| 9 | IBM Watson and Parkinson's disease: using artificial intelligence to accelerate discovery of new treatments | CPDB #PDB DN PCCF INST CCRS DAD NACRS ODB OHP ASTHMA A CHF COPD HYPER ODD OMD CONTACT RPDB ORAD g#sag |
| 10 | ICDs and CRTs in patients with CKD: A meta-analysis | ICD |

| # | Project Title | ICES Data |
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| 80 | ICES Faculty Scholars Program (2017-2019) | CPDB IPDB DN LHN PCCF REF INST AVGPRIE ESTSOB CCRS CORR CPRO DAD HCD HOBIC NACRS NRS ODB OHP OMRS RAICA RAHC SDS ASTHMA CHF COPD HIV HYPER MOMBABY OCCC ODD OMD ORAD CENSUS CONTRACT POP RPDB ICES CAPE OCCI OCR ONGAS OLIS OTR ADP ONMARG |
| 81 | ICES-Derived Mental Health and Addictions Severity Score (MHASS) | IPDB LHN PCCF INST CCRS DAD HCD NACRS NRS ODB OHP OMRS RAHC SDS MOMBABY CENSUS RPDB CAPE ONMARG CIC getag |
| 82 | ICES-Ontario HIV Clinic Network Client Mix Study-ARCH Clinic | IPDB DAD NACRS ODB OHP OMRS ASTHMA CHF COPD HIV HYPER ODD RPDB ARCH Clinic |
| 83 | IDEAS (Improving & Driving Excellence Across Sectors) - St. Joseph's Health Centre Economic Evaluation | DAD NACRS OHP RPDB CAPE |
| 84 | IDEAS (Improving & Driving Excellence Across Sectors) - St. Thomas Elgin Economic Evaluation | DAD NACRS OHP RPDB CAPE |
| 85 | Identifying clinical and sociodemographic risk factors for severe pediatric RSV-related illness | DAD NACRS ODB ASTHMA MOMBABY CENSUS RPDB ONMARG ORGD CIC flusht OHP OMRS SDS flusht |
| 86 | Identifying Comorbid Conditions as Risk Factors of West Nile Virus Neuroinvasive Disease in the Ontario Population, 2002-2012 | CORR DAD NACRS ODB OHP SDS ASTHMA CHF COPD HIV HYPER OCC ODD ORAD RPDB PHO lab data W/N/ OCR |

| # | Project Title | ICES Data |
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| 87 | Identifying delirium risk and outcomes at the end of life in continuing care: A population-based administrative data study | #PDB DN PCCF REF INST CCRS DAD HCD NACRS NRS ODB OHP OMHRS RAICA RAIHC SDS ASTHM ACHF COPD HYPER OCCC ODD OMD ORAD CENSUS CONTACT RPDB NIS DEMENTA ORGD |
| 88 | Identifying delirium risk factors and outcomes using administrative data | #CPDB #PDB DN LHN PCCF REF INST CCRS DAD HCD NACRS ODB OHP RAIHC SDS CONTACT RPDB ADP OCCC ORAD NIS J |
| 89 | Identifying ethnicity from administrative data | #RPDB CIC DN REF DAD NACRS ODB OHP SDS HYPER ODD RPDB OUS ETHNI C ORGD CCN CCHS Surname |
| 90 | Identifying Help-Seeking Patterns in Primary Care by Young People with First-Episode Psychosis | #CPDB #PDB DN LHN PCCF REF CCRS DAD HCD HOBIC NACRS NRS ODB OHP OMHRS RAICA RAIHC SDS CENSUS CONTACT RPDB CAPE ONMARG |
| 91 | Identifying high-risk patients through deep learning and natural language processing | #CPDB #PDB DN LHN PCCF REF INST CCRS DAD HCD HOBIC NACRS NRS ODB OHP OMHRS RAICA RAIHC SDS ASTHM ACHF COPD HY HYPER MOMBAY OCCC ODD OMD ORAD CENSUS CONTACT POP RPDB HCBS ADP CAPE CENSUSDA EMERALD CCHS OCR PCPOP |

| # | Project Title | ICES Data |
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| 22 | Identifying non-traumatic spinal cord dysfunction (NTSCD) in administrative health data in Ontario: Advancing the NTSCD algorithm | CCRS DAD HCD NACRS NRS ODB OHP OMHRS SDS CENSUS RPDB ALR NDPP OCR ESAS NTSCD_ChatReviewOttawa |
| 23 | Identifying OA patients, site specific OA and disease severity in EMERALD using artificial intelligence methods | IPDB DAD NACRS ODB OHP EMERALD |
| 24 | Identifying potential efficiencies in radiation treatment delivery in Ontario | CPDB LHIN PCCF INST DAD NACRS ODB OHP SDS RPDB ALR NDPP OCR |
| 25 | Identifying Predictors of Cumulative Health Care Costs Associated with Trans-Catheter aortic valve implantation in severe aortic stenosis | DIN LHIN PCCF REF INST AVGP/RIE ESTS/OB CCRS DAD HCD NACRS NRS ODB OHP OMHRS SDS CHF HYPER ODD RPDB ADP CAPE GAPP OCC1 OHCAS CCN |
| 26 | Identifying risk factors for reoperation after femoral neck fracture in Ontario | CPDB IPDB INST AVGP/RIE STDP/RIE E CCRS DAD HCD NACRS NRS ODB OHP OMHRS SDS CHF COPD HYPER ODD QMD RPDB ADP HCD/MOH OCC1 |
| 27 | Identifying the COPD phenotype using real-world evidence | CPDB IPDB DIN LHIN PCCF REF INST CCRS DAD HCD NACRS ODB OHP OMHRS SDS ASTHM A CHF COPD HYPER ODD QMD QRAD CENSUS CONTACT POP RPDB ADP CAPE OMHRS ORGD CCHS CC OCR OUS |

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|--------------------------|--|---|
| <input type="checkbox"/> | Identifying Type 1 Diabetes in EMR and administrative health data in Ontario: A Validation Study | CPDB IPDB DIN REF DAD NACRS ODB OHP SDS NOMBABY ODD CONTACT RPDB ADP ERCLAIM EMERALD QIS CFDR LMC Diabetes Data |
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| # | Project Title | ICES Data |
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| ☑ | Identifying upstream factors of violent deaths: a population-based study in Ontario | LHIN PCCF REF DAD NACRS OHP CENSUS CONTACT POP RPDB ONMARG POPCAN ORGD CIC OMHRS MOMBABY |
| ☑ | Illness and the risk of self-harm in young people | DAD NACRS ODB OHP RPDB OSR Dementia |
| ☑ | Immigration and the Risk of Multiple Sclerosis | IPDB DAD NACRS ODB OHP OMHRS SDS ASTHMA CHF COPD HYPER ODD CENSUS RPDB CCHS CIC ETHNIC CCRS HCD |
| ☑ | Immunization coverage among newcomers to Ontario | IPDB LHIN PCCF DAD NACRS ODB OHP MOMBABY CENSUS RPDB CAPE ONMARG CIC EMERALD REF SDS OCR PCPOP Data extract from Panorama containing select data elements School Board data |
| ☑ | Impact of a hospital discharge e-notification program on physician follow-up and unplanned readmission: a time series analysis | CPDB IPDB DIN LHIN PCCF REF INST DAD NACRS ODB OHP OMHRS SDS ASTHM A CHF COPD HYPER OCCC ODD OMD ORAD CENSUS RPDB CAPE ONMARG DEMENTIA ORGD e-Notification Participants |
| ☑ | Impact of a Regional Asthma Care Network on Health Services Utilization: A data linkage analysis | CPDB IPDB DIN LHIN PCCF REF DAD NACRS ODB OHP OMHRS SDS ASTHM A CONTACT RPDB CAPE getag Asthma Management and Outcomes Monitoring System (AMOMS) data |
| ☑ | Impact of anesthesiologist and surgeon sex on patient outcomes after non-cardiac surgery: a population-based, retrospective cohort study | IPDB INST CPRO DAD NACRS OHP SDS ASTHMA CHF COPD HYPER ODD OMD CENSUS POP RPDB |

| # | Project Title | ICES Data |
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| 84 | Impact of caregiver distress on health care utilization and psychotropic medication use among community-dwelling older adults with dementia | CPDB IPDB DIN LHN PCCF REF DAD HCD NACRS ODB OHP SDS ASTHM A CHF COPD HIV HYPER ODD RPDB CAPE |
| 87 | Impact of CCRT Programs on the Outcomes of Surgical Patients in Ontario | IPDB PCCF INST CCRS DAD NACRS OHP SDS RPDB OCR |
| 88 | Impact of CPFC training standards on health care practice outcomes | CPFC |
| 89 | Impact of CNS Depressant Burden on the Relationship Between New Opioid Use and Fracture Risk Among Older Adults | IPDB DIN DAD NACRS ODB OHP OMRS SDS ASTHM A CHF COPD HYPER ODD OMD ORAD RPDB |
| 90 | Impact of electronic medication reconciliation on selected inappropriate discharge prescribing at London hospitals | CPDB IPDB DIN LHN INST DAD NACRS ODB OHP OMRS SDS HYPER ODD CONTACT RPDB NMS Medication Reconciliation |
| 91 | Impact of high sensitivity troponin on health care service utilization and cardiovascular outcomes | IPDB DIN LHN PCCF REF INST CORR DAD NACRS ODB OHP SDS HYPER ODD CONTACT POP RPDB OLIS ORRS |
| 92 | Impact of Hospice Centres on Death in Acute Care Among Cancer Patients: An Interrupted Time Series Analysis | REF DAD RPDB OCR PCCF |
| 93 | Impact of immigration status and ethnicity on stroke care and outcomes | DIN PCCF REF DAD NACRS ODB OHP ASTHM A CHF COPD HYPER ODD GENSIS RPDB CIC ETHNIC RCSN OLIS ORGD CCHS |

| # | Project Title | ICES Data |
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| 84 | Impact of Infliximab on Real-World Health Outcomes and Costs in Inflammatory Bowel Diseases: A Population-Based Time Series Analysis | IPD B LHIN N INS T AVGP/ICE CCRS DAD HCD NACRS NRS ODB OHP OMRS SDS CHF COPD OCC CONTACT RPDB ADP CAPE GAPP ONCAS OCCI ESTSOB OCR |
| 85 | Impact of Influenza and Virus Seasons on Asthma Morbidity and Mortality in Ontario | IPDB LHIN PCCF INST DAD NACRS ODB OHP SDS ASTHMA CHF COPD HYPER ODD OMD CENSUS CONTACT POP RPDB ERCLAIM ONMARG OCR ORGO |
| 86 | Impact of minimally invasive vs open radical hysterectomy on oncologic outcomes in cervical cancer: A population-based study | IPDB AVGP/ICE ESTSOB DAD OHP SDS ASTHMA COPD HYPER ODD CENSUS CONTACT POP RPDB CAPE OBSP OCR ORGO Cervical MS Outcomes |
| 87 | Impact of pain quality indicator and analgesia prescribing in long term care-an interrupted time series analysis | CPDB IPDB DNI CCRS DAD NACRS ODB OHP OCC CONTACT RPDB |
| 88 | Impact of palliative care in advanced COPD | CPDB IPDB LHIN PCCF AVGP/ICE ESTSOB CCRS DAD HCD NACRS NRS ODB OHP OMRS SDS ASTHMA CHF COPD HIV HYPER OCC ODD OMD ORAD CENSUS CONTACT POP RPDB CAPE GAPP ONMARG |
| 89 | Impact of permanent feeding tube placement in patients with acute stroke: Predictors, complications, and outcomes | DAD NACRS CENSUS RPDB ORGO |

| # | Project Title | ICES Data |
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| 8 | Impact of Permanent Pacemaker Implantation on Clinical Outcomes of Patients After Transcatheter Aortic Valve Implantation (TAVI) | DN LHIN PCCF REF AVGP/RE CCRS DAD HCD NACRS NRS OOB OHP OMHRS SDS COPD HYPER ODD RPDB ADP CAPE GAPP OHCAS OCCI CCN |
| 9 | Impact of post-surgical cardiac implantable electronic device (CIED) related infections | CPDB IPDB DN LHIN AVGP/RE CCRS DAD HCD NACRS NRS OOB OHP OMHRS SDS ASTHMA CHF COPD HYPER ODD CONTRACT RPDB ADP CAPE GAPP OHCAS OCCI |
| 10 | Impact of Pre-Existing Mental Health Conditions (MHC) among Incident Dialysis Patients in Ontario - Prevalence Study | LHIN PCCF INST CCRS CORR DAD HCD NACRS NRS OOB OHP OMHRS CENSUS RPDB CHF COPD HYPER ODD OMD OCR |
| 11 | Impact of Provider and System Factors on Length of Stay After Colorectal Surgery | CPDB IPDB LHIN PCCF INST DAD NACRS OHP RPDB OCR ONMARG |
| 12 | Impact of Psychiatric and Medical Comorbidity on Mortality | AVGP/RE CCRS HCD NRS OOB SDS ADP CAPE GAPP OHCAS OCCI |
| 13 | Impact of Psychiatric and Medical Comorbidity on Risk of Mortality | IPDB LHIN DAD NACRS OHP OMHRS ASTHMA CHF COPD HIV HYPER OCC ODD OMD ORAD CENSUS POP RPDB OCR AVGP/RE CCRS HCD NRS OOB SDS ADP CAPE GAPP OHCAS OCCI |

| # | Project Title | ICES Data |
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| ☑ | Impact of publicly funded herpes zoster immunization program on burden of disease in Ontario | CPDB IPDB DIN LHIN PCCF REF NST CCRS DAD HCD HOBIC NACRS NRS ODB OHP OMHRS RAICA RAHC SDS ASTHM A CHF COPD HIV HYPER MCMRABY OCCC ODD OMD ORAD CENSUS CONTACT POP RPDB HCES ADP CAPE CENSUSCA EMRALD CCHS OCR |
| ☑ | Impact of putative chemo-preventative agents on prostate cancer outcomes among patients with a negative first biopsy | IPDB DIN LHIN PCCF DAD NACRS ODB OHP ODD CENSUS RPDB OCR SDS CONTACT OLS |
| ☑ | Impact of Residual Coronary Artery Disease (CAD) on TAVI Patients | DIN LHIN PCCF REF DAD NACRS ODB OHP SDS CHF COPD HYPER ODD OMD RPDB CCN IPDB OMHRS |
| ☑ | Impact of right-censoring on long-term mortality of immigrants and long-term residents in Ontario | PCCF DAD NACRS ODB OHP OMHRS CHF HYPER ODD CENSUS RPDB ETHNIC CC OCR OSR DIN REF ASTHM COPD OLS ORGO |
| ☑ | Impact of Select Socioeconomic, Individual and Environmental Determinants on Multimorbidity | CPDB IPDB LHIN PCCF REF DAD NACRS OHP OMHRS SDS ASTHM A COPD HIV HYPER ODD CENSUS CONTACT POP RPDB CAPE CCHS ORGO IPDB PCPOP IRS |
| ☑ | Impact of Sex and Gender on Initiation and Discontinuation of Psychotropic Medications Among Long-Term Care Residents with Dementia | DIN LHIN PCCF REF ODB POP RPDB NMS |

| # | Project Title | ICES Data |
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| 22 | Impact of social economic status, travel time and location of diagnosis in newly diagnosed DLBCL in the rituximab era: a large population cohort | DAD NACRS OHP RPDB ETHNIC NDPP OCR CCRS HCD OHRS SDS ASTHMA CHF COPD HYPER OCCC ODD OMD ORAD DEMENTIA |
| 23 | Impact of surgeon factors on the management and outcomes of acute appendicitis | IFDB LHIN PCCF REF INST DAD NACRS OHP SDS CENSUS POP RPDB CPDB |
| 24 | Impact of the Sault Ste. Marie Radiation Facility on Choice of Surgical Option among Breast Cancer Patients in the Algoma Region | PCCF REF AVGPRICE ESTS08 SDS CENSUS ADP CAPE GAPP OCCI OHCAS ONMARG |
| 25 | IMPACT: Comparison of outcomes and late effects of osteosarcoma and Ewing sarcoma in Ontario AYA treated in pediatric versus adult centres | DAD NACRS OHP SDS CENSUS RPDB ADP CENSUSCA ORGD OCR POGONIS IMPACT IFDB CIC |
| 26 | IMPACT: Long Term Mental Health Outcomes in AYA with Cancer | DAD NACRS ODD OHP OHRS RPDB IMPACT |
| 27 | IMPACT: Pregnancy and Perinatal Outcomes in Female Survivors of Childhood, Adolescent, and Young Adult Cancer | CPDB IFDB LHIN PCCF REF INST DAD NACRS OHP SDS MOMBABY CONTACT RPDB CHF ORGD OCR |
| 28 | IMPACT: Prevalence and Predictors of High-Intensity End-Of-Life Care Among AYA with Cancer in Ontario | INST DAD NACRS OHP SDS CENSUS CONTACT RPDB ERCLAIM OCR POGONIS IMPACT |
| 29 | Impacts of Low Acuity Patients transported by Ambulance in the Emergency Department | CPDB IFDB DN LHIN PCCF REF CCRS DAD HCD NACRS NRS ODD OHP RAHC ASTHM ACHF COPD HYPER ODD OMD ORAD CONTACT POP RPDB |

| # | Project Title | ICES Data |
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| 81 | Implementation of Pharmacogenomics-based Personalized Medicine 5-Fluorouracil and Capecitabine | #PDB #DN #LHN #PCCF #REF #AVGPRCE #CCRS #DAD #HCD #NACRS #NRS #ODB #OHP #OMHRS #SDS #CENSUS #CONTACT #POP #RPDB #ADP #CAPE #OLIS #HYPER #ODD Personalized Medicine Database |
| 81 | Improving Care for Patients with Chronic Kidney Disease using Electronic Medical Record Interventions: A Pragmatic Cluster Randomized Trial | EMERALD |
| 82 | Improving maternity care for women living with HIV in Ontario | #CPDB #PDB #LHN #PCCF #DAD #NACRS #OHP #OMHRS #CHF #HIV #HYPER #MOMBABY #ODD #OMD #CENSUS #POP #RPDB #ERCLAIM #ONMARG #CIC |
| 83 | Improving outcomes in kidney transplant recipients | #PDB #PCCF #REF #CORR #DAD #NACRS #ODB #OHP #SDS #RPDB #TGLN Comprehensive Renal Transplant Research Information System (CoReTRIS) |
| 84 | Improving Outcomes in the Pediatric to Adult Care Transition in IBD - Health Resource Utilization | #PDB #LHN #INST #DAD #NACRS #OHP #SDS #OCCC #RPDB #ERCLAIM SickKids IMPACT IBD |
| 85 | Improving Patient Experience and Health Outcomes Collaborative Project (PEHOC) | #DN #LHN #INST #DAD #NACRS #ODB #OHP #SDS #RPDB #ALR #OCR #ESAS #CIC #HCD #ORGD |
| 86 | Improving quality of care for individuals who require long-term support | #CPDB #PDB #DN #LHN #PCCF #REF #INST #AVGPRCE #ESTSOB #CCRS #CFRO #DAD #HCD #NACRS #NRS #ODB #OHP #OMHRS #RAICA #RAIC #SDS #ASTHMA #CHF #COPD #HIV #HYPER #OCCC #ODD #OMD #ORAD #CONTACT #POP #RPDB #LOC #CIC #ORGD #CENSUS #ADP #CAPE #DEMENTIA LTC Facility Care Quality Survey |
| 87 | Improving Risk Prediction for Primary Prevention of Atherosclerotic Cardiovascular Disease Events | #DN #PCCF #REF #DAD #NACRS #ODB #OHP #SDS #ODD #OLIS #ORGD |
| 88 | Improving stroke prevention therapy for patients with atrial fibrillation in primary care protocol for a pragmatic, cluster-randomized trial | EMERALD |

| # | Project Title | ICES Data |
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| 25 | Improving the management of pain in cancer patients in Ontario | ALR NDPP DN OMHRS SDS ODD |
| 26 | Incidence and predictors of long-term upper tract complications after radical cystectomy and urinary diversion for bladder cancer | CPDB IPDB LHN PCCF INST DAD NACRS OHP SDS CHF HYPER ODD OMD RPDB ALR NDPP OCR |
| 27 | Incidence and prevalence of diabetes for Peel Public Health | LHN PCCF DAD OHP ODD POP RPDB |
| 28 | Incidence and prevalence of diabetes, COPD, ischemic heart disease and cerebrovascular disease for Peel Public Health | LHN PCCF DAD OHP COPD ODD POP RPDB |
| 29 | Incidence and risk factors of Renal Vein Thrombosis in Neonates in Ontario | PCCF REF CORR DAD NACRS OHP SDS MOMBABY CENSUS CONTACT RPDB ONMARG |
| 30 | Incidence and severity of adverse events from treatment with adjuvant trastuzumab-based chemotherapy in HER2+ breast cancer patients | PCCF AVGPRICE STDPRICE DAD NACRS ODB OHP SDS CHF COPD HYPER ODD OMD ALR NDPP OCR EBP Trastuzumab |
| 31 | Incidence of cancer among immigrants in Ontario | CENSUS RPDB OC OCR |
| 32 | Incidence of cardiovascular diseases in pediatric solid organ transplant recipients | CPDB IPDB DN LHN PCCF REF CORR DAD NACRS ODB OHP SDS ASTHM A CHF ODD OMD CENSUS POP RPDB ETHNIC ORGO PTD |
| 33 | Incidence of Emergency Department Visits and Hospitalizations (ED+H) during Chemotherapy and Development of a Risk Prediction Model- ML | IPDB DN LHN REF INST DAD HCD NACRS ODB OHP CENSUS CONTACT RPDB OLIS ALR NDPP OCR getag Ontario Symptom Management Collaborative Database |
| 34 | Incidence of emergency room visits and hospital readmissions following ambulatory surgery in Ontario | getag |
| 35 | Incidence of heart failure in immigrants | CHF |

| # | Project Title | ICES Data |
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| ☑ | Incidence of self-harm leading to Emergency Department use, hospitalization or death in people exposed to incarceration | CPDB #PDB DN LHN PCCF REF CCRS DAD HCD NACRS NRS ODB OHP OMRS RAICA RAHC CONTACT CAPE |
| ☑ | Incidence of Traumatic Brain Injury among Ontarian adults with and without Intellectual and Developmental Disabilities and 30-Day Readmissions | CPDB #PDB DN PCCF REF INST DAD NACRS ODB OHP OMRS SDS CENSUS CONTACT RPDB POP POPCAN OMARG CPDB #PDB INST ESTSDB CAPE |
| ☑ | Incidence of urological intervention for upper urinary tract stone removal in autosomal dominant polycystic kidney disease | #PDB PCCF REF INST CORR DAD NACRS NRS OHP SDS CONTACT RPDB OLS CPDB #PDB INST |
| ☑ | Incidence, Prevalence and Burden of Dementia and Cognitive Impairment in the Population | #PDB DN LHN PCCF REF INST AVGP/RE CCRS CPRO DAD HCD NACRS NRS ODB OHP OMRS RAICA RAHC SDS ASTHMA CHF COPD HIPER ODD OMD CONTACT POP RPDB ADP CAPE ENCLAIM GAPP OHCAS OCCI CCHS ORGD |
| ☑ | Incidence, Prevalence and Health Care Costs associated with Multiple Sclerosis across LHNs | LHN PCCF CCRS DAD NACRS NRS ODB OHP OMRS CENSUS POP RPDB CAPE HCMMOH |
| ☑ | Incidence, prevalence, and cost of HPV-related diseases in Ontario | CCRS DAD HCD NACRS NRS ODB OHP OMRS SDS HIV RPDB ADP CAPE HCMMOH OHCAS OCR PCCF CENSUS POP |

| # | Project Title | ICES Data |
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| 66 | Incident dementia in an elderly population using anticholinergic medications for overactive bladder (OAB) | CPDB #PDB DN LHN PCCF REF INST DAD NACRS OGB OHP SDS ODD OMD RPDB OMHRS |
| 67 | Including Selected Cancers in the Canadian Chronic Disease Surveillance System (CCOSS) for Multimorbidity and Economic Surveillance in Canada | #PDB DN PCCF REF AVGPRICE ESTSOB DAD NACRS OGB OHP OMHRS SDS CENSUS POP RPDB OCR |
| 68 | Indicators for Durham Region Health Neighbourhoods- Update | DAD OHP RPDB CCN CIC Toronto Cardiac Rehabilitation dataset from 1996-2010 CANUE walkability data NACRS CANUE Canadian Active Living Environments (Can-ALE) |
| 69 | Indicators for HKPRD Health Unit Neighbourhoods | CPDB #PDB DN LHN PCCF REF INST AVGPRICE ESTSOB CCRS DAD HCD NACRS NRS ODB OHP OMHRS SDS CHF COPD HIPER ODD OMD ORAD CENSUS CONTACT RPDB ADP CAPE GAPP OCCI OCR NMS HKPRDHU Neighbourhood Geography Crosswalk File |
| 70 | Indicators for Regional Municipality of Halton | PCCF REF OHP ASTHMA COPD HIPER ODD CENSUS CONTACT POP RPDB NACRS ORGD Halton DACharacteristics CANUE Walkability Data |
| 71 | Inequities in access to care in Ontario by immigrant class | CPDB #PDB DAD NACRS OHP OMHRS ASTHMA CHF COPD HIPER ODD OMD CENSUS CONTACT POP RPDB CAPE CIC CHC |
| 72 | Inequities in uptake and quality of primary care in different models of health services for children - a cross-country comparison | #PDB PCCF DAD NACRS ODB OHP SDS ASTHMA MOMBABY ODD CENSUS RPDB CAPE ONMARG CIC |

| # | Project Title | ICES Data |
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| 75 | Inequities of Access to Advanced Prostate Cancer Treatments: A Provincial-Wide Assessment | CPDB #PDB DN LHN PCCF REF INST CCRS DAD HCD HOBIC NACRS NRS ODS OHP OMHS RAICA RAHC SDS ASTHM ACHF COPD HY HYPER MOMBABY OCCC ODD OMD ORAD CENSUS CONTACT POP RPDB HCES ADP CAPE CENSUSDA EMERALD CCHS OCR PCPOP OCCC ORAD CENSUS CIC NDPP |
| 76 | Infants born to women with disabilities: Health and health care | PCCF DAD NACRS OHP OMHS MOMBABY ODD OMD RPDB OCR ORGO POGONIS |
| 75 | Infectious complications among childhood acute lymphoblastic leukemia (ALL) and acute myeloid leukemia (AML) in Ontario | DAD NACRS OHP OMHS RPDB OMARG ORGO POGONIS |
| 75 | Inflammatory bowel disease and first-onset psychiatric disorders in pregnancy and postpartum | DAD NACRS OHP OMHS MOMBABY OCC RPDB HYPER ODD |
| 77 | Influence of cannabis in pregnancy on offspring perinatal and childhood health outcomes: a population-based birth cohort | #PDB PCCF DAD NACRS OHP MOMBABY CENSUS RPDB BORN DN ODS RPDB ODS |
| 75 | Influence of chronic disease and comorbidity on colorectal cancer screening during 2010-2016 in Ontario | CPDB #PDB CCRS CORR DAD NACRS OHP OMHS CHF COPD HYPER OCC ODD CENSUS RPDB CAPE OCR ODS SDS |
| 75 | Influence of diabetes on colorectal cancer stage at diagnosis and survival | PCCF REF INST CCRS DAD NACRS OHP CENSUS RPDB |
| 75 | INFLUENCE OF GERIATRIC CONSULTATION FOR SENIORS WITH TRAUMA | CCRS DAD HCD NACRS ODS OHP CHF HYPER ODD OMD CONTACT RPDB TOH_Glau_Consult |

| # | Project Title | ICES Data |
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| 71 | Influenza vaccine effectiveness against cardiovascular outcomes among older adults in Ontario | DIN PCCF CCRS CORR DAD HCD NACRS ODB OHP OMHRS SDS ASTHM A CHF COPD HIV ODD CONTACT RPDB DEMENTIA ORGD OCR FLUSHOT ORRS |
| 72 | Influenza vaccines, stains, and laboratory-confirmed influenza outcomes in older adults: can vaccines and stains reduce the burden of influenza? | DIN PCCF CCRS CORR DAD HCD NACRS ODB OHP SDS ASTHM A CHF COPD HIV ODD CONTACT RPDB DEMENTIA OCR ORRS FLUSHOT stat flushot OLS |
| 73 | Informing the development of revised strategies for cervical screening in Ontario | LHN PCCF CCRS DAD HCD NACRS ODB OHP OMHRS SDS CENSUS CONTACT RPDB MS OCCL ONMARG ORGD ALR CIC NDPP OCR gataag |
| 74 | Initial experience with percutaneous left atrial appendage occlusion devices in Ontario, Canada | DIN PCCF REF DAD NACRS ODB OHP SDS CHF COPD HYPER ODD RPDB DEMENTIA CCN |
| 75 | Initiation of prescription opioid treatment for non-cancer pain and time to opioid-related addiction in Ontario: A population-based study | CPDB IPDB DIN LHN PCCF REF INST AVGP/ICE ESTS/DB DAD HCD NACRS NRS ODB OHP SDS ASTHMA CHF COPD HYPER ODD OCC ODD ORAD CENSUS RPDB ONMARG NDPP OCR ORGD ALR CPDB IPDB DIN LHN PCCF REF OMHRS ASTHMA A CHF COPD HYPER |
| 76 | Injuries from Motor-vehicles and Prior Adjuvant Chemotherapy Termination | DAD NACRS ODB OHP SDS RPDB OCR |

| # | Project Title | ICES Data |
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| 77 | Institutional, provider, and patient factors related to overtriage of the trauma patient | #PDB LHN INST CCRS DAD HCD NACRS NRS ODB OHP RPDB ONMARG OTR AVGPRICE OMRS SDS ADP CAPE GAPP OHCAS ONMARG OCCI ESTSOB NMS |
| 78 | INTEGRATE Model of Palliative Care - Value Assessment | CPDB #PDB DN LHN PCCF INST AVGPRICE STDPRI E CCRS CPRO DAD HCD NACRS NRS ODB OHP RAICA RAIHC SDS CENSUS RPDB CAPE MS ONMARG OCCI ALR NDPP OESP OCR ORGO ESAS NMS COO INTEGRATE palliative data |
| 79 | Intentional Injuries: Prevalence, Patterns and Prevention Strategies | #PDB DN LHN PCCF REF CCRS DAD HCD NACRS NRS ODB OHP OMRS RAIHC SDS ASTRIM A CHF COPD HYPER OCC ODD OMD ORAD CONTACT RPDB OCR MCMABY ONMARG |

| # | Project Title | ICES Data |
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| 7 | Interdisciplinary Glaucoma Care | CCRS CORR DAD NACRS ODB OHP CHF HYPER ODD OMD CONTACT RPDB ASTHMA COPD HYPER OMD |
| 8 | Inter-facility Transport of Critically Ill Children in Ontario | ORIP ASTHMA |
| 9 | International approaches to high-cost patients | LHIN CCRS DAD HCD NACRS NRS ODB OHP OMIRS SDS ASTHMA CHF COPD HYPER ODD OMD RPDB ADP OCR Drug Product Database (DPD) |
| 10 | International comparisons of CV outcomes | CPDB IFDB DN LHIN PCCF INST AVGPRCE ESTSOB CCRS DAD HCD HOBIC NACRS NRS ODB OHP SDS CENSUS RPDB ERCLAIM OCCL ONMARG ETHNIC ALR CIC NDPP OCR ESAS gpaip |
| 11 | Interprofessional team service delivery within Ontario Community Health Centres (CHCs) | CPDB IFDB LHIN PCCF REF DAD NACRS ODB OHP SDS ASTHMA A CHF COPD HYPER ODD CENSUS POP RPDB CAPE CIC getag data_chc |

| # | Project Title | ICES Data |
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| 15 | Interprofessional team-based primary health care for patients with complex health and social needs: impact on health services utilization | CPDB IPDB DAD NACRS OHP OMHRS ASTHMA CHF COPD HYPER ODD CENSUS RPDB CAPE ONMARG CHC %agesag DN ODB |
| 16 | Interprofessional Teams Access Gaps in Care | CPDB IPDB LHN PCCF DAD NACRS ODB OHP OMHRS SDS ASTHMA CHF COPD HIV HYPER MOMBABY ODD CENSUS CONTRACT POP RPDB HCES CAPE GAPP CIC OESP OCR PHYSNET CHC CBI NMS Neighbourhood Crosswalk PCPOP AVGPRICE ESTS0B CCRS HCD NRS ADP OCCI OHCAS Toronto Neighbourhood Postal Code Crosswalk File |
| 17 | Interprofessional Teams in the Context of Payment Reform: Selection Factors and Association with Access to Care and Health Care Utilization | CPDB IPDB LHN PCCF DAD NACRS OHP OMHRS ASTHMA CHF COPD HYPER ODD CENSUS CONTRACT POP RPDB HCES CAPE PCPOP |
| 18 | Interrupted time-series analysis of the effects of hospital funding reforms in Ontario: a population-based retrospective cohort study | CPDB IPDB DN LHN PCCF REF INST CCRS CORR DAD HCD NACRS NRS ODB OHP OMHRS SDS ASTHMA ACHF COPD HYPER ODD OMD ORAD CENSUS CONTRACT POP RPDB HCDMCH ONMARG OCR ORGD |
| 19 | Interventions to Support Long-Term Adherence and Decrease Cardiovascular Events Post-Myocardial Infarction | IPDB PCCF CCRS DAD HCD NACRS NRS ODB OHP OMHRS SDS ASTHMA COPD ODD RPDB ADP CAPE ONMARG CCN CIC ISLAND |

| # | Project Title | ICES Data |
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| 12 | Intestinal ischemia and abdominal emergencies after cardiac surgery in Ontario – prevalence, severity, and clinical outcomes | IPDB LHN PCCF REF INST DAD NACRS NRS OHP SDS ODD RPDB |
| 13 | Intracranial metastatic disease in the era of targeted therapies | RPDB ALR OCR NDPP DAD |
| 14 | Intraseason waning of influenza vaccine effectiveness | PCCF CCRS CORR DAD HCD NACRS ODB OHP SDS ASTHM ACHF COPD HIV ODD CONTACT RPDB OCR FLUSHOT ORRS |
| 15 | Intravenous drug use and trends in infectious endocarditis | IPDB LHN PCCF REF INST CORR DAD NACRS ODB OHP OMHS SDS CENSUS CONTACT PCF RPDB |
| 16 | Investigating adverse outcomes in children from Sarnia, Ontario's chemical valley | CPDB IPDB DN LHN PCCF REF INST AVGP/ICE ESTSOB CCRS DAD HCD NACRS NRS ODB OHP OMHS RADIA RAHC SDS CENSUS CONTACT RPDB ALR NDPP OCR |
| 17 | Investigating antibiotic use and antibiotic resistant rates in Spinal Cord Injury Populations | DN REF DAD NACRS NRS ODB OHP RPDB OLS EMRPC |
| 18 | Investigating health care utilization and health outcomes among transgender individuals in Ontario | LHN DAD NACRS ODB OHP OMHS SDS ASTHMA CHF COPD HIV HIPER OCC ODD OMD ORAD CENSUS RPDB OCR Transgender clients' health information |

| # | Project Title | ICES Data |
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| 77 | Investigating health service utilization among retirement home residents in Ontario, Canada | CPDB #PDB DIN LHN PCCF REF CCRS DAD HCD NACRS NRS ODB OHP OMHRS RAICA RAHC SDS ASTHM A CHF COPD HYPER ODD OMD ORAD CENSUS CONTACT RPDB CAPE ONMARG DEMENTIA RHRA OCCC OCR |
| 78 | Investigating survival, mortality, and avoidable death due to high mortality cancers in Ontario | PCCF DAD NACRS OHP SDS CONTACT RPDB ALR NDP OCR ORGD POP REF |
| 79 | Investigation of diagnostic, treatment and health service utilisation outcomes of patients with breast disease in Ontario | #PDB DAD OHI P SDS CONTACT RPDB ALR OCR PCCF POP ODB NDP ORGD |
| 80 | Investigation of newborn screening markers and other birth characteristics for the prediction of neonatal sepsis, birth asphyxia and death | ORGD |
| 81 | Investigation of the Effect of Maternal Weight on Pediatric Health Service Utilization | #PDB DIN LHN PCCF REF CCRS DAD HCD NACRS ODB OHP RAICA RAHC CHF COPD HYPER ODD CENSUS CONTACT RPDB CAPE HSU AVGPRICE ESTSOS CONTACT |
| 82 | Is Caesarean Section During the Second Stage of Labor Associated with Increased Risk of Preterm Birth in Subsequent Pregnancy? | #PDB DAD OHP SDS MOMBABY ETHNIC BORN HYPER ODD |
| 83 | Is epidural use during labor associated with a reduced risk of post-partum depression? | #PDB DIN LHN PCCF REF INST DAD NACRS ODB OHP OMHRS SDS MOMBABY ODD CENSUS CONTACT POP RPDB ONMARG ORGD BORN |
| 84 | Is Exposure to Antenatal Corticosteroids During Pregnancy Associated with Adverse Neurodevelopmental Outcomes in Infants Born During the Late-Preterm and Term Period? | #PDB OHP MOMBABY RPDB BORN DAD |

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| 76 | Is hospital type associated with application of evidence-based recommendations for children's wrist fractures treated in Ontario EDs? | CPDB FDB LHN PCCF REF INST DAD NACRS OHP SDS CENSUS RPDB OCR POP ONMARG |
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| # | Project Title | ICES Data |
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| 76 | Is the receipt of inpatient palliative care associated with continuity to community palliative care after discharge? | CPDB #PDB DIN LHN PCCF REF INST CCRS CPRO DAD HCD NACRS NRS ODB OHP OMHRS RAICA RAHC SDS ASTHM A CHF COPD HYPER OCOC ODD OMD ORAD CENSUS CONTACT POP RPDB DEMENTIA ORGO OCR |
| 77 | John Howard Poverty Reduction Project | PCCF INST DAD NACRS ODB OHP OMHRS ASTHMA CHF COPD HIV HYPER OCC ODD OMD ORAD RPDB ONMARG NMS ORGO Reenrollment - Centre Client Data |
| 78 | Joint statistical models for simultaneously predicting functional status and symptom burden among patients with cancer | CPDB LHN PCCF REF AVGPRICE ESTS0B DAD HCD NACRS ODB OHP RAICA RAHC ASTHM A CHF COPD HYPER ODD OMD ORAD CENSUS RPDB CAPE ORGO ALR OCR ESAS No official name |
| 79 | Kawasaki disease and the risk of chronic immune-mediated inflammatory conditions (IMDs) in children | #PDB DIN LHN PCCF INST DAD NACRS OHP SDS ASTHM A CHF OCOC ODD OMD ORAD CENSUS CONTACT POP RPDB MOMBABY |
| 80 | Keppra (levetiracetam) Use in Ontario | #PDB DAD NACRS OHP OMHRS RPDB ONMARG |
| 81 | Kidney function and the effectiveness and safety of direct oral anticoagulant therapy in atrial fibrillation | #PDB DIN LHN PCCF REF CORR DAD NACRS ODB OHP SDS CHF COPD HYPER ODD OMD CONTACT RPDB GDML OLIS |
| 82 | Kidney graft loss in female recipients of male kidneys: The effect of pre-transplant pregnancy (HYAb02) | HYPBR ODD TSAN |

| # | Project Title | ICES Data |
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| 75 | Kidney graft loss in female recipients of male kidneys: The effect of pre-transplant pregnancy (H/Ab02) | REF CORR DAD NACRS OHP MOMBABY CONTACT RPDB OLUS HYPER ODD TGLN |
| 76 | Kidney health after a hypertensive disorder of pregnancy | IPDB CORR DAD NACRS OHP SDS MOMBABY CENSUS CONTACT RPDB |
| 77 | Kidney transplant referral indicators for Ontario chronic kidney disease programs | PCCF REF CORR DAD NACRS OHP SDS CONTACT RPDB ORRS TGLN ODML OLUS |
| 78 | Kidney transplant referral rates amongst Ontario renal programs | PCCF REF CORR DAD NACRS OHP SDS CONTACT RPDB ORRS TGLN IPDB ODML CORS ODB OLUS OCR |
| 79 | Knowledge to Action: Improving local therapy for young women with breast cancer | Alberta Health Services Health Information |
| 80 | Labetalol and Risk of Postpartum Depression | DAD ODB OHI P MOMBABY RPDB |
| 81 | Laboratory monitoring following new renin-angiotensin-aldosterone system blockade prescriptions and associations with adverse outcomes | CPDB IPDB DIN LHN PCCF REF AVGPRICE CORS CORS DAD HCD NACRS NRS ODB OHP OHRS SDS CENSUS CONTACT RPDB ADP CAPE GAPP OCCI ORGD ODML OLUS |
| 82 | Late life depression in Ontario | CPDB IPDB PCCF AVGPRICE ESTSIB CORS DAD HCD NACRS NRS ODB OHP OHRS SDS CENSUS CONTACT POP RPDB CAPE GAPP ONMARG NMS ORGD CCHS PCPOP gltacg |
| 83 | Length of Initial Prescription at Hospital Discharge and Long-term Medication Adherence Study for Elderly Patients Post-Myocardial Infarction | NST MCS CHC |

| # | Project Title | ICES Data |
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| 25 | Leveraging EMRs and Health Administrative Data to Evaluate Patient Care and Outcomes in OA (EMRALD-OA bridge grant 2 - patterns of care) | CPDB IPDB DIN LHN PCCF REF INST AVGPRICE STDPPRICE DAD NACRS ODB OHP OMHRS SDS ASTHMA CHF COPD HYPER OCC ODD OMD ORAD CENSUS POP RPDB EMRALD PCPOP |
| 26 | Leveraging routinely collected health data to enhance veteran and family health (REACH) | IPDB DIN LHN PCCF INST CCRS DAD HCD NACRS NRS ODB OHP OMHRS SDS ASTHM ACHF COPD HIV HYPER ODD OMD ORAD CENSUS RPDB ONMARG ORGD ALR OCR getag Cohort Military identifier (from OHP): 1 effective_date (date joined military); 2 end_date (date left military); 3 other_cin_cd (veteran/family identified) |
| 27 | Levetiracetam and the risk of acute kidney injury and other adverse outcomes | IPDB DIN LHN PCCF REF INST CORR DAD NACRS ODB OHP SDS CENSUS CONTACT POP RPDB ODML OLS AVGPRICE ESTSOB CCRS HCD NRS OMHRS ADP CAPE GAPP OCC1 OHCAS |
| 28 | Life expectancy and health behaviours for Public Health Units | IPDB LHN PCCF AVGPRICE ESTSOB CCRS DAD HCD NACRS NRS ODB OHP OMHRS SDS CONTACT RPDB ADP CAPE GAPP OCC1 OHCAS |

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| <p>五</p> | <p>Limb Loss in Peripheral Artery Disease</p> | <p> IPDB DIN LHN PICCF INST DAD NACRS NRS ODB QHP OMRS SDS CHF COPD HYPER ODD CENSUS POP RPDB ORGD CIC HCD AVGPRIE ESTSOB CCRS HCD ADP CAPE GAPP OCCJ OHCAS </p> |
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| # | Project Title | ICES Data |
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| 71 | Linkage of the Rick Hansen Spinal Cord Injury Registry (RHSCIR) to Health Administrative Data in Ontario | LHN PCCF CCRS DAD HCD NACRS NRS ODB OHP OMHS RPDB ADP Rick Hansen Spinal Cord Injury Registry (RHSCIR) |
| 72 | Linkage of whole genome sequencing and administrative health data for the study of autism spectrum disorder - Clinical and genomics data | CPDB IFDB PCCF REF INST DAD HCD NACRS ODB OHP OMHS SDS ASTHMA OCC ODD CENSUS CONTACT RPDB CHF COPD HYPER OMD POND Clinical Data POND Clinical Data - OBI Identifier |
| 73 | Linkage of whole genome sequencing and administrative health data for the study of autism spectrum disorder | CPDB IFDB PCCF REF INST DAD HCD NACRS ODB OHP OMHS SDS ASTHMA OCC ODD CENSUS CONTACT RPDB ENRALD |
| 74 | Linking EMR with Administrative data: The Impact of Interprofessional Primary Care teams on Diabetes and Health Care Utilization | CPDB IFDB REF DAD NACRS OHP OMHS CHF ODD RPDB CAPE CPCSNN (Canadian Primary Care Sentinel Surveillance Network) |
| 75 | Linking Laboratory and Administrative Data to Evaluate Influenza Vaccine Effectiveness in Elderly Adults | ORGO |
| 76 | Linking laboratory and administrative data to evaluate influenza vaccine effectiveness in pregnant women | DAD NACRS ODB OHP SDS ASTHMA CHF COPD HIV MOMBABY ODD RPDB OCR flusht ONMARG |
| 77 | Linking Laboratory and Administrative Data to Study Influenza and Influenza Vaccine Epidemiology | OLIS |
| 78 | Liver disease after gestational diabetes | DAD OHP HYPER MOMBABY ODD RPDB ETHNIC |
| 79 | Living kidney donor contacts across Ontario Chronic Kidney Disease Programs | CPDB IFDB DN PCCF INST CCRS DAD HCD NACRS ODB OHP OMHS CHF HYPER ODD ORAD CONTACT RPDB gntag ADP DEMENTIA OCR |

| # | Project Title | ICES Data |
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| 76 | Long Term Outcomes Among Adults Undergoing Transcatheter Patent Foramen Closure | DN LHN PCCF REF AVGP/ICE CCRS DAD HCD NACRS NRS ODB OHP OMHRS SDS ASTHMA CHF COPD HYPER MOMBABY ODD OMD CONTACT RPDB ADP CAPE GAPP OCCI ORCAS ORGO Transcatheter PFO Cohort |
| 77 | Long Term Outcomes and Postoperative complications for patients with persistent or recurrent squamous cell carcinoma | CPDB IPDB DN LHN PCCF REF INST CCRS DAD HCD NACRS ODB OHP SDS HIV CONTACT RPDB OCR ORGO ALR NDPP |
| 78 | Long term outcomes of congenital heart defects | OLS |
| 79 | Long Term Outcomes Post Transcatheter Versus Surgical Atrial Septal Defect Closure In Comparison To General Population | The Hospital for Sick Children database |
| 80 | Longitudinal healthcare resource use and costs of pediatric epilepsy and epilepsy surgery | CPDB IPDB DN LHN PCCF REF INST DAD HCD NACRS NRS ODB OHP RAHC SDS ASTHMA A CHF COPD HYPER ODD OMD CENSUS CONTACT POP RPDB ADP CCHS CC Pediatric drug resistant epilepsy |
| 81 | Long-term cardiovascular outcomes following surgical treatment of congenital conduction diseases | IPDB REF INST DAD NACRS OHP SDS RPDB ORGO The Hospital for Sick Children Congenital Cardiac Surgery Database (CCSdb) |
| 82 | Long-term cardiovascular outcomes in children with Kawasaki disease: A population-based cohort study | PCCF REF AVGP/ICE ESTSOB CORR DAD NACRS OHP SDS HYPER MOMBABY ODD OMD CENSUS CONTACT POP RPDB ETHNIC ORGO |
| 83 | Long-term care facility antibiotic use, inter-institutional patient movement, urine culturing practices, and C difficile infection rates | INST CCRS DAD NACRS ODB OHP RPDB OLS PCCF |

| # | Project Title | ICES Data |
|---|---|---|
| 1 | Long-term exposure to fine particulate matter components and common chronic diseases | DAD NACRS ODB OHP SDS ASTHMA CHF COPD HYPER ODD OMD CENSUS CONTACT RPDB ONMARG CCHS OCR ORGD OPHECE ETHNIC DEMENTIA CIC |
| 2 | Long-term health care costs and utilization attributable to hand trauma in Ontario | CPDB PDB DIN LHIN PCCF REF INST AVGPRCE STDPRIC E DAD HCD NACRS NRS ODB OHP OMHRS SDS CENSUS CONTACT RPDB OTR ESTSOB CCRS ADP CAPE GAPP OCCI OHCAS |
| 3 | Long-term healthcare resource use, costs, and mortality associated with sepsis: a population-based retrospective cohort study | PDB DIN LHIN PCCF REF INST AVGPRCE ESTSOB CCRS DAD HCD NACRS NRS ODB OHP OMHRS RAICA RAHC SDS ASTHMA CHF COPD HYPER ODD OMD CENSUS CONTACT RPDB ADP CAPE GAPP OCCI OHCAS ORGD OCR |
| 4 | Long-term impact of COPD on postoperative cardiorespiratory morbidity and mortality: a population-based historic cohort study | INST CHC |
| 5 | Long-term Metabolic complications after Liver Transplantation: New Onset Diabetes after Transplant | DIN PCCF REF CORR DAD NACRS ODB OHP SDS HYPER ODD CONTACT RPDB OCR ORGD TGLN |
| 6 | Long-Term Morbidity and Mortality Among Mothers and Siblings of Children with Cancer: A Population-Based Study Using Health Services Data | LHIN INST DAD NACRS OHP OMHRS RPDB SDS HYPER |
| 7 | Long-Term Non-Oncologic Outcomes of Minimally Invasive versus Open Surgery for Intra-Abdominal Malignancies | DAD NACRS OHP RPDB ALR OCR |

| # | Project Title | ICES Data |
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| 78 | Long-term Outcomes after Pregnancy in Women with Heart Disease | CPDB IPDB LHN PCCF INST DAD NACRS ODB OHP OMHRS SDS ASTHMA CHF COPD HYPER ODD ORAD CENSUS CONTACT POP RPDB CAPE POPCAN Pregnancy in Women with Heart Disease (PregHD) |
| 79 | Long-Term Outcomes and Health Resource Utilization in Children with Multicystic Dysplastic Kidney: A Population-Based Study | IPDB PCCF REF CORR DAD NACRS OHP SDS MOMBABY CENSUS CONTACT RPDB GDMC CPDB AVGP/ICE STDP/ICE E CCRS NRS OMHRS OCC ADP CAPE GAPP OHCAS OCC |
| 80 | Long-term outcomes following emergency general surgery in the elderly | CPDB IPDB LHN INST ESTS/OB CCRS CPRO DAD HCD HOBIC NACRS NRS ODB OHP OMHRS RAICA RAIHC CENSUS CONTACT POP RPDB ADP ERCLAIM HCDMOH LOC ONMARG |
| 81 | Long-term outcomes of chronic opioid users after surgery | DAD NACRS ODB OHP RPDB AVGP/ICE STDP/ICE E CCRS NRS OMHRS ADP NIS ORGO |
| 82 | Long-term outcomes of endovascular versus open surgical repair of abdominal aortic aneurysms: a population based approach | IPDB LHN INST DAD NACRS ODB OHP SDS ASTHMA CHF COPD HYPER ODD OMD POP RPDB ORGO ODB ORAD INST DAD NACRS ODB OHP CHF COPD HYPER ODD POP RPDB |
| 83 | Long-Term Outcomes of First Episode Psychosis: 10-Years After Admission to an Early Psychosis Intervention Program | LHN PCCF DAD NACRS ODB OHP OMHRS SDS ASTHMA CHF COPD HV HYPER ODD CENSUS RPDB ORGO MCSCS Prevention & Early Intervention in Psychosis Program (PEPP) |

| # | Project Title | ICES Data |
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| 17 | Long-term outcomes of older adults undergoing major cancer surgery | LHN PCCF INST CCRS DAD HCD NACRS NRS ODB OHP SDS CENSUS RPDB ONMARG ALR NDPP OCR ESAS getag |
| 18 | Long-term Outcomes of Pulmonary Hypertension After Transcatheter Closure of Atrial Septal Defect in Adults | DIN REF DAD NACRS ODB OHP SDS CHF COPD HYPER ODD ODD OMD CENSUS RPDB ORGD Transcatheter ASD cohort |
| 19 | Long-term Outcomes of Transcatheter Closure of Atrial Septal Defect in Adult and Elderly Patients | DIN REF DAD NACRS ODB OHP SDS CHF COPD HYPER ODD OMD CENSUS RPDB Transcatheter ASD cohort ORGD |
| 20 | Long-term Outcomes of Transcatheter Closure of Atrial Septal Defect in Patients with Moderate to Severe Functional Tricuspid Regurgitation | DIN REF DAD NACRS ODB OHP SDS CHF COPD HYPER ODD OMD CENSUS RPDB Transcatheter ASD cohort |
| 21 | Looking beyond administrative health care data: the role of SES in predicting future mental health and addiction high-cost patients | LHN PCCF AVGP/ICE CCRS DAD HCD NACRS NRS ODB OHP OMHS SDS CENSUS RPDB ADP ONMARG CCHS getag CAPE GAPP OCCI OHCAS |
| 22 | Low Risk Birth in Ontario | LHN PCCF INST DAD NACRS OHP SDS ASTHMA CHF COPD CENSUS RPDB ONMARG ALR OCR ORGD |
| 23 | Low-emetogenic chemotherapy regimens | CPDB RPDB LHN PCCF REF INST DAD NACRS ODB OHP MOMBABY CENSUS CONTACT RPDB CAPE ONMARG ETHNIC ALR NDPP OCR ORGD |

| # | Project Title | ICES Data |
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| 34 | Lung Cancer Screening Pilot for People at High Risk (HRLCSF) | CPDB IFDB DIN PCCF REF INST AVGPRCE STDPRIC E CCRS DAD HCD NACRS NRS ODS OHP OMHRS SDS CONTACT RPDB ADP ALR NDFP OCR ORGO WCDC |
| 35 | Machine Learning for Population Health Risk Prediction | AVGPRCE CCRS DAD HCD NACRS NRS ODS OHP OMHRS SDS ODD CONTACT RPDB ADP CAPE GAPP NPHS OCCI OHCAS CCHS |
| 36 | Machine Learning Model Development for Prediction of Long Term Mortality and Functional Outcomes in the Rapid Response Activations | LHN PCCF REF CCRS DAD HCD NACRS NRS OHP OMHRS RAICA RAHC SDS ASTHMA CHF COPD HYPER OCCC ODD OMD ORAD CENSUS CONTACT RPDB CENSUSCA ORGO RACE Machine Learning Long Term Outcomes |
| 37 | Machine learning models for disease classification based on symptoms | CPDB IFDB DIN LHN PCCF REF INST CCRS DAD HCD HOBIC NACRS NRS ODS OHP OMHRS RAICA RAHC SDS ASTHM A CHF COPD HV HYPER MOMBABY OCCC ODD OMD ORAD CENSUS CONTACT POP RPDB HCES ADP CAPE CENSUSCA EMERALD CCHS OCR PCPOP |
| 38 | Machine Learning Techniques to Predict Readmissions after Acute Coronary Syndrome Hospitalization | IFDB DIN LHN PCCF REF INST DAD NACRS ODS OHP OMHRS SDS ASTHM A CHF COPD HV HYPER OCC ODD OMD CENSUS CONTACT RPDB EFFECT EFFECT2 |

| # | Project Title | ICES Data |
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| 85 | Machine Learning Techniques to Predict Readmissions after Acute Coronary Syndrome Hospitalization - Random forest | IPDB DIN LHN PCCF REF INST DAD NACRS ODB OHP OMRS SDS ASTHM A CHF COPD HIV HYPER OCC ODD OMD CENSUS CONTACT RPDB EFFECT EFFECT2 |
| 86 | Machine Learning to Predict Compensated Cirrhosis | CPDB IPDB DIN LHN PCCF REF INST CCHS DAD HCD HOBIC NACRS NRS ODB OHP OMRS RAICA RAHC SDS ASTHM A CHF COPD HIV HYPER MOMBABY OCC ODD OMD ORAD CENSUS CONTACT POP RPDB HCS ADP CAPE CENSUSCA EMRALD CCHS OCR PCPOP |
| 87 | Macrolide prophylaxis for COPD in Ontario | DIN REF DAD NACRS ODB OHP SDS ASTHMA CHF COPD HYPER OCC ODD OMD ORAD RPDB ADP |
| 88 | Major complications following surgery a validation study | DIN LHN PCCF REF DAD NACRS ODB OHP OMRS SDS ASTHM A CENSUS CONTACT POP RPDB ONMARG ETHNIC CFR CJC OCR ORGD Major complications following surgery |
| 89 | Making better use of randomized trials: assessing applicability and transporting causal effects (PCOR1) | DIN PCCF REF INST DAD NACRS NRS ODB OHP SDS CENSUS RPDB ORGD RCSN National Institute of Neurological Disorders and Stroke (NINDS) n-PA Stroke Trial 1 and |
| 90 | Managed Alcohol Programs: Implementation and Effectiveness | MAP data |

| # | Project Title | ICES Data |
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| 85 | Management and outcomes of cancer patients with immune-related adverse events (irAEs) admitted to hospital while on immunotherapy | IPDB DIN LHIN REF INST DAD HCD NACRS ODB OHP RPDB OLS ORGD ALR CIC NDPP OCR ESAS getag |
| 86 | Management of Advanced Prostate Cancer | IPDB DIN LHIN PCCF INST DAD NACRS ODB OHP SDS ASTHM A CHF COPD HYPER ODD CENSUS CONTACT POP RPDB OLS EMERALD ETHNIC NACRS |
| 87 | Managing High-Need, High-Cost Patients: An International Perspective Study | IPDB CCRS DAD NACRS ODB OHP RAHNC CHF ODD RPDB OLS |
| 88 | Managing multi-morbidity in primary care: Examining integration efforts within and across organizational boundaries | CPDB IPDB LHIN REF DAD NACRS ODB OHP ASTHM A CHF COPD HYPER ODD OMD GRAD CONTACT RPDB CAPE CHC ONMARG Primary care Collaboration Survey |
| 89 | Managing post-transplant kidney care in Ontario at home | IPDB PCCF REF ESTSOB CORR DAD NACRS NRS ODB OHP OMRS SDS CENSUS CONTACT RPDB ADP CAPE GAPP HCDMOH OCCI OHCAS GDML ORRS TGLN |
| 90 | Maternal and fetal outcomes in pregnancy and chronic kidney disease | IPDB DIN LHIN PCCF REF CORR DAD NACRS ODB OHP SDS MOMBABY RPDB data_bon data_gthi |

| # | Project Title | ICES Data |
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| 21 | Maternal and neonatal outcomes by GDM diagnostic criteria | CPDB #PDB DN LIRN PCCF REF NST CCRS DAD HCD HOBIC NACRS NRS ODB OHP OMHRS RAICA RAHC SDS ASTHM ACHF COPD HIV HYPER MOMBABY ODD ODD OMD ORAD CENSUS CONTACT POP RPDB HCES ADP CAPE CENSUSCA EMRALD CCHS CCR PCPOP |
| 22 | Maternal and perinatal outcomes in women experiencing incarceration in Ontario, Canada: a retrospective cohort study | PCCF DAD NACRS OHP OMHRS HIV HYPER MOMBABY ODD CHC MCSCS RPDB SDS |
| 23 | Maternal opioid use and the risk of gastrochitis: a population-based case control study | DN PCCF REF DAD OHP MOMBABY ODD RPDB HYPER MOMBABY ODD RPDB NMS |
| 24 | Maternal-child primary care provider concordance: a population-based cohort study exploring health outcomes | CPDB #PDB PCCF DAD NACRS OHP OMHRS SDS MOMBABY CENSUS RPDB CAPE CC ORGO |
| 25 | Maximizing salivary efficacy in prostate cancer by interrogating and backing feedback mechanisms (MSEPC) | ETHNIC DEMENTIA AS_Snap_Shot |
| 26 | MCSS-ICES Data Working Group | #PDB DN LIRN PCCF REF NST AVGP/ICE ESTSOB CCRS DAD HCD NACRS NRS ODB OHP SDS ASTHMA CHF COPD HYPER ODD OMD CONTACT RPDB HCDMDH ORGO |
| 27 | Measuring Substance-Related Disorders and Interprovincial Comparison of Health Impact (Ontario component) | DAD OHP OMHRS RPDB ORGO |

| # | Project Title | ICES Data |
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| 25 | Measuring the cost-effectiveness of palliative care | #PDB #DIN #LHN #PCCF #REF #INST #AVGPRICE #STDPRI #E CCRS #CPRO #DAD #HCD #NACRS #NRS #ODB #OHP #OMHRS #RAIDA #RAHC #SDS #ASTHMA #CHF #COPD #HV #HYPER #ODD #OMD #CONTACT #POP #RPDB #ORGD #OCCC #ORAD #DEMENTIA #CAPE #PCPOP |
| 26 | Mediation analysis in the Canadian Community Health Survey: A population-based study of the association between sitework and diabetes | #LHN #PCCF #REF #DAD #NACRS #OHP #HYPER #ODD #CENSUS #CONTACT #POP #RPDB #CCHS |
| 27 | Medical Aid Involving Dying and Equity Norms | #DAD #NACRS #ODB #OHP #RPDB #gtag |
| 28 | Medical Care Costs and Healthcare Economic Outcomes of Direct-Acting Oral Anticoagulants and Warfarin | #LHN #PCCF #INST #DAD #NACRS #ODB #OHP #OMHRS #MCBABY #CENSUS #CONTACT #POP #RPDB #CIC #ORGD #NMS |
| 29 | Medical grade cocaine and peteoperative morbidity - a population based analysis | #DAD #NACRS #OHP #SDS #CHF #HYPER #ODD #OMD #RPDB #PDB |
| 30 | Medication discontinuation following hospitalization in adults with COPD | #CPDB #PDB #DIN #LHN #PCCF #REF #INST #CCRS #DAD #HCD #NACRS #ODB #OHP #OMHRS #SDS #ASTHM #A CHF #COPD #HYPER #ODD #OMD #ORAD #CONTACT #RPDB #CAPE #ONMARG #CIC #OCR #ORGD |
| 31 | MedsCheck After Hospital Discharge | #CPDB #PDB #DIN #LHN #INST #DAD #HCD #HOBIC #NACRS #ODB #OHP #OMHRS #CHF #COPD #CENSUS #RPDB #CAPE #CENSUSCA #HCOMDH #ONCAS #ONMARG #CIC |

| # | Project Title | ICES Data |
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| 25 | MedsCheck Use in Ontario: An Updated Analysis | DIN ODB OHP ODD RPDB |
| 26 | Mental Health and Addictions Acute Care Alliance (MHAACA) AHRQ | IPDB LHN PCCF INST DAD NACRS ODB OHP CHF HYPER ODD OMD RPDB ETHNIC ALR NDPP OCR ORGD |
| 27 | Mental Health and Addictions bed capacity in Ontario (MHA Bed Capacity) | CPDB IPDB DIN LHN PCCF REF INST CCRS DAD HCD HOBIC NACRS NRS ODB OHP OMHRS RAICA RAHC SDS ASTHM A CHF COPD HIV HYPER MOMBABY OCC ODD OMD ORAD CENSUS CONTACT POP RPDB HCES ADP CAPE CENSUSCA EMERALD CCHS OCR PCPOP |
| 28 | Mental Health and Addictions Scorecard and Evaluation Framework (MHASEF) - Child and Youth Scorecard 2019 | DAD OHP MOMBABY RPDB IMPACT POGONIS BORN BORN Niday |
| 29 | Mental Health and Addictions System Performance among Ontario's First Nations | LHN PCCF INST DAD NACRS ODB OHP OMHRS SDS MOMBABY CENSUS CONTACT POP RPDB OHCAS OTR ORGD OCR IRS NMS TLMHP CHC OOP |
| 30 | Mental Health and Addictions-related Quality Standards Indicators for Ontario Shores Centre for Mental Health Sciences | DAD NACRS OHP RPDB NSO |
| 31 | Mental Health and Suicide in Cancer Patients | DAD NACRS OHP OMHRS SDS RPDB OCR ORGD |
| 32 | Mental Health Outcomes in Mothers and Siblings of Children with Cancer | IPDB REF DAD NACRS OHP OMHRS MOMBABY RPDB OCR ORGD POGONIS |

| # | Project Title | ICES Data |
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| 86 | Mental health outcomes in victims of physical assault during childhood: A population-based study | PCCF DAD NACRS ODB OHP OMHRS SDS MOMBABY CENSUS RPDB ERCLAM ONMARG ORGO CIC |
| 87 | Mental health service use and outcomes of postpartum women following mental health emergency department visits | LHN PCCF REF INST DAD NACRS NRS OHP SDS CHF COPD HYPER ODD CENSUS CONTACT PCP RPDB ODB PCPOP IPDB SDS ETHNIC ORGO CHC |
| 88 | Mental Health Status: Reporting from Different Sources: Is there agreement? | LHN PCCF DAD NACRS OHP OMHRS CHF HYPER ODD OMD RPDB CCHS CIC OCR |
| 89 | Mental health utilization and mortality of older adults with suicide ideation | DAD NACRS OHP OMHRS ORGO CCHS |
| 90 | Mental health wellness surveillance framework for NishnawbeAski Nation communities | IPDB DAD NACRS OHP SDS OCCC RPDB smurty_ib4_main_enc_20171026 smurty_ohp_final_ikn_20171026 gslag |
| 91 | Mental health wellness surveillance framework for Weenedayko Area Health Authority (WAHA) communities | IPD DAD OHI P MOMBABY RPDB BORN ORGO |
| 92 | Metabolites and characteristics at birth for prediction of inflammatory bowel disease | MOMBABY OCC RPDB BORN NSO DAD |
| 93 | Metabolomics of Birth: Assessing the influence of environmental and physiological factors on infant metabolic profiles | PCCF REF DAD NACRS OHP MOMBABY RPDB data_born data_nso |
| 94 | Methodological Considerations of registry-based cluster-randomized controlled trials in hemodialysis | CPDB IPDB DN LHN PCCF REF INST AVG/PCE ESTSOB CCRS CRR DAD HCD NACRS NRS ODB OHP OMHRS SDS CHF COPD HV HYPER ODD OMD ORAD CENSUS CONTACT PCP RPDB ORGO ORRS QLS |

| # | Project Title | ICES Data |
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| 22 | Methods to Attenuate Glaucoma by Inhibiting Carbonic-anhydrase (MAGIC) | DAD NACRS OGB OHP OMHRS SDS RPDB |
| 23 | Méris Household Survey descriptive data analysis | PCC F RPDB MVC |
| 24 | Méris Mental Health Indicators Project | LHN DAD NACRS OHP OMHRS RPDB data_mmo |
| 25 | Metronidazole neurotoxicity among elderly Ontarians | DIN LHN PCCF REF DAD OGB OHP OMHRS RPDB NIS |
| 26 | Michael Garron Hospital Prolonged-ventilation Wearing Centre (PWC) Evaluation | REF INST DAD HCD NACRS OGB OHP SDS CHF COPD HYPER ODD OMD CENSUS RPDB CCN PWC cohort |
| 27 | Migration and Diabetes Incidence and Prevalence in Chinese from 2000 to 2016: An International Comparative Study of Canada and China | CCRS DAD HCD NACRS NRS OGB OHP OMHRS CONTACT RPDB CCHS |
| 28 | Mining EMERALD for clinical decision support | IFDB DAD NACRS OGB OHP SDS CENSUS RPDB EMERALD |
| 29 | Mining of population-based routinely collected health data to determine risk factors | PCCF INST DAD NACRS OHP SDS ASTHMA MOMBABY OCC ODD RPDB CIC BORN ACHI PM2.5, NO2 and O3 exposures by postal code |
| 30 | Minor procedural activity in ambulatory clinics as potentially qualifying for QBP funding | IFDB IFDB INST DAD NACRS OHP SDS RPDB s/phc clinics |
| 31 | Modernization of Record Linkage | RPDB OUS |
| 32 | Molecular characterization and behaviour of tumours arising in patients taking 5-alpha reductase inhibitors | OGB OHP RPDB OCR IFDB LHN INST DAD NACRS SDS OUS ETHNIC ALK NDPP OGB OHP OCR |

| # | Project Title | ICES Data |
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| ☒ | Morbidity and Mortality of Genetic Hemochromatosis: Population Based Study | CCRS DAD HCD NACRS ODB OHP SDS CENSUS RPDB OCCI OHCAS ALR NDPP OCR CORR ODD ORGO HEIRS database |
| ☒ | Mortality and health care utilization among CAMH outpatients | IPDB LHN DAD NACRS OHP OMHRS CENSUS RPDB ORGO INST AVGPRICE CCRS CORR HCD NRS ADP PCPOP CAMH outpatient data |
| ☒ | Mortality and Revision Rates of Morbidly Obese Total Knee Replacement Patients | IPDB REF INST DAD NACRS OHP SDS CONTACT RPDB ONMARG |
| ☒ | Mortality rates across geographic regions and populations residing within the North Bay Parry Sound District Health Unit | PCCF REF CENSUS POP RPDB ONMARG ORGO |
| ☒ | Mortality Trends among First Nations Communities Served by Mamow Ahyamowen | PCCF REF DAD NACRS OHP ASTHM A CHF COPD HYPER OCC ODD QMD ORAD CENSUS CONTACT RPDB OHCAS ONMARG OTR OCR ORGO IRS |
| ☒ | Mortality trends following first episode psychosis | IPDB LHN PCCF DAD NACRS ODB OHP OMHRS RPDB ORGO |
| ☒ | Multi-Care Kidney Clinic visits for patients with chronic kidney disease who meet criteria for referral | CPDB IPDB DN LHN PCCF REF CCRS DAD HCD HOBIC NACRS NRS ODB OHP OMHRS RAICA RAHC SDS CONTACT RPDB CAPE ONMARG |

| # | Project Title | ICES Data |
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| 87 | Multimorbidity Characterization and Optimal Healthcare Design with Machine Learning | DN PCCF REF CCRS CPRO DAD HCD HOBIK NACRS NRS ODB OHP OMHRS RAICA RAHC SDS ASTHMA CHF COPD HIV HYPER OCCC ODD OMD ORAD CENSUS CONTACT RPDB QLS ONMARG NMS DEMENTIA ORGD CIC OCR LIRN MOMBABY ERCLAIM AVGP/RIE ESTS/OB CAPE GAPP OHCAS |
| 81 | Multi-national meta-analysis of all-cause mortality after prison release | IPDB LIRN DAD NACRS OHP CENSUS RPDB EMERALD Persons incarcerated in provincial facilities in 2000 |
| 82 | Multivariate profiling of hospital performance on an array of quality indicators for stroke patients | CCRS DAD NACRS NRS ODB OHP RAHC ORGD DN LIRN PCCF REF INST HCD OMHRS SDS CENSUS POP RPDB |
| 85 | Narcotic prescription patterns following elective outpatient surgery | ESAS |
| 84 | Narcotic use in patients with kidney stones and long-term outcomes | IPDB DN PCCF REF INST AVGP/RIE ESTS/OB CCRS DAD HCD NACRS NRS ODB OHP OMHRS SDS CHF COPD HIV HYPER MOMBABY OCCC ODD OMD ORAD RPDB ADP CAPE GAPP OCCI OHCAS NMS DEMENTIA |
| 85 | Neighbourhood drivability, car dependency, and health | PCCF DAD OHP ASTHMA CHF COPD HYPER ODD OMD CENSUS POP RPDB DA-level walkability index 2005 ORAD OPHECE ETHNIC OC PCPOP DA-level driving data Walkability Data |

| # | Project Title | ICES Data |
|----|--|---|
| 35 | Neighbourhood socioeconomic status, residential mobility and health | LHN PCCF DAD NACRS OHP ASTHMA CHF COPD HYPER ODD OMD CENSUS CONTACT POP RPDB ONMARG ORGD CCHS CIC |
| 37 | Neighbourhood Walkability and Diabetes-Related Complications | PCCF DAD NACRS OHP SDS HYPER ODD CENSUS POP RPDB ONMARG CIC ETHNIC Walkability ULS EMRALD CCHS OPHECE OPHECW |
| 38 | Neoadjuvant versus adjuvant in cystectomy patients | PDB LHN DAD NACRS ODB OHP SDS ASTHMA CHF COPD HYPER OCCC ODD OMD RPDB ALR NDPP OCR |
| 39 | Nephrology and Multi-Care Kidney Clinic visits for patients with chronic kidney disease who meet criteria for referral | PDB PCCF CORR DAD OHP SDS RPDB OMRS GDML ULS CPDB LHN NACRS CAPE |
| 40 | Nephrologist Follow-up versus Usual Care after Acute Kidney Injury: Follow-up of a Randomized Controlled Trial | PDB DIN LHN PCCF REF CORR DAD NACRS ODB OHP SDS RPDB GDML Nephrologist Follow-up versus Usual Care after an Acute Kidney Injury Hospitalization (FUSION) |
| 41 | Nephrology visits for patients with chronic kidney disease who meet criteria for referral | CPDB PDB DIN LHN PCCF INST CCRS DAD HCD NACRS NRS ODB OHP OMRS SDS ASTHMA A CHF COPD HYPER ODD CENSUS POP RPDB ULS ONMARG POP/CAN NIS |
| 42 | Neuroprogression in patients with mood disorders: A population-based cohort study | PCCF CCRS DAD HCD NACRS ODB OHP OMRS ASTHMA CHF COPD HW HYPER ODD OMD CONTACT RPDB ONMARG CC |

| # | Project Title | ICES Data |
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| ☒ | Neuropsychiatric effects of Montelukast in asthma management: A prospective cohorts study of administrative health data in Ontario, Canada | DN INST DAD NACRS ODB OHP OMHRS SDS ASTHM A CHF COPD HYPER ODD OMD CENSUS POP RPDB ONMARG OCR ORGO |
| ☒ | New Ambulatory Models of Care (NAMoC) - Value Assessment | CPDB IPDB DN LHN PCCF REF CCRS CPRO DAD HCD NACRS NRS ODB OHP OMHRS SDS ASTHM A CHF COPD HIV HYPER OCCC ODD OMD ORAD CENSUS POP RPDB CAPE CENSUS/CA ONMARG POPCAN New Ambulatory Models of Care (NAMoC) - Cost Analysis |
| ☒ | New onset atrial fibrillation in Ontario, Canada | IPDB DN LHN PCCF REF DAD NACRS ODB OHP SDS ASTHM A CHF COPD HYPER ODD CENSUS RPDB CCRS DEMENTIA ORGO |
| ☒ | New Onset Peri-Operative Atrial Fibrillation After Coronary Artery Bypass Graft (CABG) Surgery | IPDB DN PCCF REF INST DAD NACRS ODB OHP SDS ASTHM A CHF COPD HYPER ODD CENSUS RPDB OLS CCN OCR ORGO |
| ☒ | New Opioid Use and Risk of Dose Escalation in Adults with IDD | CPDB IPDB DN DAD NACRS OHP OMHRS SDS ASTHM A CHF COPD HYPER ODD RPDB CAPE NMS gtagg |
| ☒ | New oral anticoagulant drug interactions and the risk of hemorrhage events | DN PCCF REF CORR DAD NACRS ODB OHP SDS CONTACT RPDB OLS |

| # | Project Title | ICES Data |
|---|---|--|
| ☒ | New visual analytics system for Acute Kidney Injury - Part A | #PDB #DN #LHN #PCCF #REF #DAD #HCD #NACRS #ODB #OHP #HYPER #ODD #RPDB #HCDMCH #GDM |
| ☒ | New visual analytics system for Acute Kidney Injury - Part B | #PDB #DN #LHN #PCCF #REF #DAD #HCD #NACRS #ODB #OHP #HYPER #ODD #RPDB #HCDMCH #GDM |
| ☒ | Non-invasive cardiac diagnostic testing vs watchful waiting in patients assessed for stable coronary artery disease | #DN #LHN #PCCF #REF #DAD #NACRS #ODB #OHP #SDS #COPD #HYPER #ODD #RPDB #CCHS #GDM #ASTHM #AORAD #CIC #OCR #PDB #ORGO |
| ☒ | Non-vitamin K oral anticoagulant (NOAC) for the prevention of cardiovascular events in patients with CKD | #DN #PCCF #REF #CORR #DAD #NACRS #ODB #OHP #SDS #CONTACT #RPDB #GDM #OLIS |
| ☒ | Novel clinical, molecular and -omics approaches to prediction of heart failure readmission-Phase I | #PDB #PCCF #ASTHMA #ODD #EHMRG |
| ☒ | Novel clinical, molecular, and -omics approaches to prediction of heart failure readmission-Phase I | #DAD #NACRS #ODB #OHP #SDS #CHF #COPD #HYPER #RPDB #EFFECT #ECHP #MOMBA #ORGO #EFFECT2 #PDB #PCCF #ASTHMA #ODD #EHMRG g@sq 1) ISCHEMIC HF. |
| ☒ | Novel methods to examine selection bias in observational studies on infective endocarditis | #CPDB #PDB #LHN #ESTSOB #DAD #NACRS #ODB #OHP #OMHRS #CHF #ODD #CENSUS #RPDB #CAPE #GAPP #CIC |
| ☒ | Novel Techniques Using Word Embeddings to Anonymize Clinical Notes | #EMRALD |

| # | Project Title | ICES Data |
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| ☐ | Oasis Senior Supportive Living: A Model for Active Aging-In-Place | LHIN PCCF REF INST DAD NACRS OHP CENSUS CONTACT POP RPDB HCES CPDB IFDB DIN CCRS HCD ODB OMHRS RAICA RAIHC SDS ONMARG DEMENTIA psyc ASTHMA CHF COPD HYPER ODD CAPE |
| ☐ | OBI and ICES Dynamic Linkage Pilot | RPDB |
| ☐ | Obstructive sleep apnea and cancer development and progression: evidence from clinical and health administrative data | LHIN DAD HCD NACRS OHP SDS RPDB ADP The London Health Sciences Centre Sleep Apnea Assessment Unit PSG database The Ottawa Hospital sleep database Sunnybrook Sleep Laboratory's sleep database |
| ☐ | OCAN-ICES Data Partnership for Reporting Performance Indicators of the Community Mental Health System | CBI |
| ☐ | Occurrence and management of malignancy-associated intestinal obstruction near the end of life | IFDB DIN LHIN PCCF REF INST CCRS DAD NACRS ODB OHP SDS RPDB OBSP OCR ORGD |
| ☐ | OCTANE Study | CPDB IFDB DIN LHIN PCCF REF INST AVGPRCE ESTSDB CCRS DAD HCD NACRS NRS ODB OHP OMHRS RAICA RAIHC SDS ASTHMA CHF COPD ODD OMD CENSUS CONTACT POP RPDB ADP HCDMDH OCCI OHCAS ONMARG ORGD ESAS OCTANE Trial Data |
| ☐ | ODPRN Narcotics Monitoring System (NMS) Early Evaluation | IFDB DIN REF DAD NACRS ODB OHP OMHRS ASTHMA A CHF COPD HV HYPER ODD OMD ORAD RPDB NMS DDARD PCCF SDS ALR OCR CPDB NRS OMHRS National Prescription Drug Utilization Information System Database (NPDUIS) |

| # | Project Title | ICES Data |
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| ㉔ | ODPRN Narcotics Monitoring System (NMS): Drug Utilization Review (DUR) Warning Response | #PDB DN LHN PCCF DAD NACRS ODB OHP RPDB DDARD NMS |
| ㉕ | ODPRN Narcotics Monitoring System (NMS): Opioid Prescribing by Dentists | CPDB #PDB DN LHN PCCF DAD NACRS ODB OHP SDS CENSUS RPDB NMS POP |
| ㉖ | ODPRN Narcotics Monitoring System: Chronic Opioid Use | CPDB #PDB DN LHN REF DAD NACRS ODB OHP OMHRS SDS ASTHM A CHF COPD HYPER ODD RPDB OCR NMS ALR DDARD PCCF |
| ㉗ | ODPRN NMS Persistence on Opioid Agonist Therapy | #PDB DN LHN PCCF REF CORR DAD NACRS ODB OHP SDS HYPER ODD CONTACT RPDB OLS OMHRS COPD ODD |
| ㉘ | Older Adults Seeking Emergency Care: Investigating Patient Profiles and Health Service Exposures to Inform Geriatric Case Management Models | DN PCCF REF INST CCRS CPRO DAD HCD NACRS NRS ODB OHP OMHRS RAICA RAHC ASTHMA CHF COPD HYPER ODD OMD CENSUS CONTACT RPDB ADP ONMARG DEMENTIA ORGD |
| ㉙ | ONDR: Incidence and prevalence of Parkinson's disease in Ontario by urban/rural region and socioeconomic status | CPDB #PDB DN LHN PCCF INST CCRS DAD HCD NACRS ODB OHP SDS ASTHM A CHF COPD HYPER ODD OMD ORAD CENSUS CONTACT POP RPDB ONMARG getseq |

| # | Project Title | ICES Data |
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| 30 | ONDRI: Incidence of comorbidity (neurologic, psychiatric, physical) within selected neurologic conditions in Ontario: patterns by age and sex | CPDB IPDB DN LHN PCCF INST CCRS DAD HCD NACRS NRS ODB OHP OMHRS SDS ASTHM A.CHF COPD HYPER OCCC ODD OMD ORAD CENSUS CONTACT POP RPDB |
| 31 | ONDRI: Sex differences in the health status and care needs of patients who are admitted to long-term care after stroke | LHN PCCF INST CCRS DAD HCD NACRS NRS OHP ASTHMA CHF COPD HYPER ODD OMD CONTACT RPDB |
| 32 | One-year costs associated with epilepsy in Ontario | DAD HCD NACRS OHP OMHRS MOMBABY CENSUS CONTACT POP RPDB |
| 33 | One-year mortality following emergency department visit for non-fatal opioid overdose in Ontario | LHN PCCF DAD NACRS ODB OHP OMHRS CENSUS CONTACT POP RPDB DDARD drug and drug/alcohol related death NMS |
| 34 | Ontario Asthma Cost Burden Study | IPDB DN LHN PCCF REF INST AVGPRICE ESTSOB CCRS DAD HCD NACRS NRS ODB OHP OMHRS SDS ASTHMA CHF COPD HYPER ODD OMD CENSUS CONTACT POP RPDB ADP ERCLAIM OHCAS ONMARG OC OCR ORGD |
| 35 | Ontario Diagnostic Imaging Order Appropriateness Market Analysis | IPDB DAD NACRS OHP SDS RPDB |
| 36 | Ontario Diagnostic Pathology Procedures Order Appropriateness Market Analysis | IPDB DAD NACRS OHP SDS RPDB |

| # | Project Title | ICES Data |
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| 37 | Ontario Osteoporosis Strategy Evaluation- Update 2017 | #PDB DN LHN PCCF REF AVGP/RC EST/SCB CCRS DAD HCD NACRS NRS ODB OHP OMHRS SDS ASTHMA CHF COPD OOD OMD POP RPDB |
| 38 | OPCAB vs ONCAB in Patients with Left Ventricular Dysfunction | #PDB INST DAD NACRS OHP SDS CENSUS RPDB CCN ORGO |
| 39 | OPEN Atlas Practicum 1 | CPDB #PDB DN LHN PCCF REF CCRS DAD HCD NACRS NRS ODB OHP OMHRS SDS ASTHM A CHF COPD HIV HYPER MOMBABY OCCC OOD OMD ORAD CENSUS RPDB CAPE CENSUSCA ONMARG POPCAN |
| 40 | OPEN Atlas Practicum 2 | CPDB #PDB DN LHN PCCF REF CCRS DAD HCD NACRS NRS ODB OHP OMHRS SDS ASTHM A CHF COPD HIV HYPER MOMBABY OCCC OOD OMD ORAD CENSUS RPDB CAPE CENSUSCA ONMARG POPCAN |
| 41 | OPEN Medication Management Atlas | CPDB #PDB DN LHN PCCF REF CCRS DAD HCD NACRS NRS ODB OHP OMHRS SDS ASTHM A CHF COPD HIV HYPER MOMBABY OCCC OOD OMD ORAD CENSUS RPDB CAPE CENSUSCA ONMARG POPCAN CIC |

| # | Project Title | ICES Data |
|---|--|--|
| ☒ | Opioid and non-opioid analgesic use in patients with CKD: rates, trends and adverse outcomes | CPDB #PDB LHN PCCF CORR DAD QHP SDS RPDB CAPE OLIS CPDB SDS NMS |
| ☒ | Opioid and non-opioid analgesic use in patients with CKD: rates, trends and adverse outcomes | CPDB SDS NMS |
| ☒ | Opioid prescribing patterns in long-term care residents | CPDB #PDB DIN LHN PCCF REF INST CCRS DAD HCD NACRS ODB OHP RAICA SDS CONTACT RPDB |
| ☒ | Opioid prescribing practices for women undergoing elective gynecologic | CPDB #PDB DIN PCCF INST DAD NACRS ODB QHP OMHRS SDS ODD CENSUS CONTACT RPDB NMS OCR |
| ☒ | Opioid Prescription Surveillance Tool | PCCF DAD NACRS OHP OMHRS RPDB |
| ☒ | Opioid Use after Nephrectomy for Kidney Cancer in Ontario | CPDB #PDB DIN LHN PCCF INST DAD NACRS ODB OHP RPDB ETHNIC NMS ORGO OCR getag CCRS FileNames: neph_all1ae7b.txt |
| ☒ | Opioid use and gaps in access to primary care | CPDB #PDB DIN LHN PCCF REF DAD NACRS ODB OHP OMHRS SDS ASTHM A COPD HY ODD CONTACT RPDB CAPE ONMARG NMS getag Community Health Centres |
| ☒ | Opioids and the Risk of Hospitalization for Infection | #PDB DIN LHN PCCF REF INST DAD NACRS ODB OHP SDS CHF COPD HYPER ODD CENSUS CONTACT RPDB OLIS ONMARG OCR ORGO |
| ☒ | Optimal timing of eGFR and proteinuria to define CKD | #PDB PCCF REF CORR DAD NACRS OHP SDS CONTACT RPDB GDML OLIS |

| # | Project Title | ICES Data |
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| ☐ | Optimizing integrated care for adults with COPD: The influence of the primary and specialist network of care on patient and system outcomes | CPDB IPDB DIN LHN PCCF REF INST DAD HCD NACRS ODB OHP SDS ASTHM A COPD CENSUS CONTACT POP RPDB CAPE ONMARG gmsq |
| ☐ | Oral anticoagulant-related major bleeding definitions: comparison and assessment of significance | DAD NACRS ODB OHP CHF HYPER RPDB IPDB DIN PCCF REF AVGP/PE CCRS CORR DAD NACRS NRS ODB OHP OM/RS SDS ODD CONTACT RPDB ADP CAPE GAPP HCD/MOH OHCAS OCCI OCR TGN ESTSOB OLS MS Access chat abstraction database Cohort |
| ☐ | Organization of care in the dialysis unit | IPDB PCCF REF INST CCRS CORR DAD NACRS NRS OHP SDS CHF COPD HYPER ODD OMD CONTACT RPDB OLS ORRS Dialysis program laboratory testing frequency |
| ☐ | Osteoporosis pharmacotherapy in Ontario: examining patterns of use, safety, and effectiveness among first-time users | IPDB LHN PCCF REF INST AVGP/PE ESTSOB CCRS DAD HCD NACRS NRS ODB OHP SDS ASTHMA CHF COPD HYPER OCC ODD OMD ORAD CENSUS CONTACT RPDB ERCLAIM LOC OCCI OHCAS ONMARG POPCAN OCR |
| ☐ | Otiologic Surgery Subspecialization and Regionalization - Phase 2 | LHN DAD NACRS OHP SDS ASTHMA CHF COPD HYPER ODD OMD CENSUS RPDB ADP CPDB IPDB PCCF REF INST OCC ORAD CONTACT POP CAPE MS ONMARG DEMENTA ORGO |

| # | Project Title | ICES Data |
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| 35 | Oblivion Surgery Subspecialization and Regionalization - Phase 1 | LHN DAD NACRS OHP SDS ASTHMA CHF COPD HYPER ODD OMD CENSUS RPDB ADP CPDB IPDB PCCF REF INST OCCC ORAD CONTACT POP CAPE MS ONMARG DEMENTIA ORGD |
| 37 | Our Health Counts Toronto | CPDB IPDB DAD NACRS ODB OHP OMHRS SDS MOMBABY ODD RPDB CAPE ERCLAIM OBSP ASTHMA CHF COPD HYPER OCR Our Health Counts Toronto |
| 38 | Outcomes after regionalization of high risk endometrial cancer in Ontario | IPDB DAD NACRS OHP RPDB ALR OCR PCCF ORGD getag |
| 39 | Outcomes associated with antiretroviral drug resistance testing in Ontario | CPDB IPDB CCRS DAD NACRS NRS ODB OHP OMHRS SDS RPDB CAPE HIV genetic fingerprinting and drug testing reports |
| 40 | Outcomes for mCRPC patients treated with novel therapeutic agents by urologists or medical oncologists | DN LHN PCCF REF INST CCRS DAD NACRS NRS ODB OHP SDS CHF HYPER ODD CENSUS CONTACT RPDB OLS %getag |
| 41 | Outcomes for patients with myocardial injury after non-cardiac surgery | CPDB IPDB LHN PCCF REF INST ESTSOB CCRS CORR CPRO DAD NACRS NRS ODB OHP OMHRS SDS ASTHMA CHF COPD HW HYPER OCCC ODD OMD ORAD CENSUS CONTACT POP RPDB HCES CAPE CENSUSCA ERCLAIM GAPP ONMARG POPCAN OCHS PCPOP CHC |

| # | Project Title | ICES Data |
|---|---|---|
| ☒ | Outcomes of cardiovascular disease patients in Northern vs Southern Ontario | #PDB LHIN INST DAD OHP SDS CHF HYPER ODD RPDB CCHS ORGD |
| ☒ | Outcomes of critically ill frail patients and cost analysis | OCR CCHS |
| ☒ | Outcomes of kidney transplant recipients with and without diabetes | #PDB DN PCCF REF AVGP/RE CCRS CORR DAD NACRS NRS ODB OHP OMHRS SDS ODD CONTACT RPDB ADP CAPE GAPP HCDMDH OHCAS OCCI OCR TSLN ESTSOB OLS ORGD |
| ☒ | Outcomes of urological interventions for stone removal in patients with autosomal dominant polycystic kidney disease | PCCF REF DAD NACRS OHP SDS CONTACT RPDB GML CPDB #PDB DN INST NRS ODB OMHRS |
| ☒ | Outdoor Pollution Exposure Risk Assessment (OPERA): Understanding the relationship between air pollution and chronic diseases | DAD NACRS ODB OHP SDS ASTHMA CHF COPD HYPER ODD OMD CENSUS CONTACT RPDB ONMARG CCHS OCR ORGD OPHECE ETHNIC MOMBABY |
| ☒ | Ovarian cancer risk following salpingectomy | PMS components and metals DN LHIN PCCF REF DAD NACRS ODB OHP SDS CONTACT RPDB OCR ORGD |
| ☒ | Overactive bladder medications and risk of arrhythmias | OLS |
| ☒ | Oxycodone as a predictor of persistent postpartum opioid use | CPDB #PDB DN PCCF REF INST DAD NACRS ODB OHP MOMBABY CENSUS RPDB ONMARG NMS OMHRS gtag |

| # | Project Title | ICES Data |
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| 31 | Palliative chemotherapy regimens in PANcreasAdenocarcinoma: a population-based Cost Effectiveness Analysis (PANACEA) | CPDB DIN LHN INST CCRS DAD HCD NACRS NRS ODB OHP OMHRS SDS CENSUS ONMARG ALR CIC NCRP OCR IPDB PCCF RPDB ERCLAIM %grndstlncost %gchemcost Wholesale Cancer Drug Costs |
| 32 | Parkinsonism Algorithm Incidence and Mortality | DAD NACRS OHP SDS CONTACT RPDB |
| 33 | Patient and physician characteristics associated with high community antibiotic and opioid use: an OPTIMISE study | IPDB INST DAD NACRS ODB OHP ORAD CONTACT POP RPDB CAPE PCPOP DIN ODB ASTHMA CHF COPD HYPER ODD OMD DEMENTIA Xponent 2 |
| 34 | Patient predictors of disease progression in acute type B aortic dissection in Ontarians | CPDB IPDB LHN REF INST DAD OHP CENSUS RPDB NACRS SDS HYPER ODD ORAD |
| 35 | Patient reported outcome measures (ESAS) as a predictor of peri-treatment events in head and neck cancer patients | CPDB IPDB DIN LHN PCCF REF INST DAD NACRS ODB OHP OCCC ORAD CENSUS RPDB QLS RAICA |
| 36 | Patient-Centered Care Transitions in Heart Failure (PACT-HF): A Pragmatic Multi-Center Cluster Randomized Trial | PCCF ONMARG OCR |
| 37 | Patient-Centred Innovations for Persons with Multimorbidity (PACE in MM) Propensity Matched Control Comparison for TIP/IMPACT Plus Evaluation | CPDB IPDB LHN PCCF AVGPRCE ESTSGB CCRS DAD HCD NACRS NRS ODB OHP OMHRS SDS ASTHMA CHF COPD HV HYPER OCCC ODD OMD ORAD CENSUS CONTACT POP RPDB CAPE GAPP ONMARG PCPOP PACEinMM |
| 38 | Patient-reported symptoms in the perioperative period of breast cancer treatment | LHN PCCF INST CCRS DAD HCD NACRS ODB OHP SDS CENSUS RPDB ONMARG ALR CIC OCR ESAS |

| # | Project Title | ICES Data |
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| 28 | Patients' use of health services in HNHBLHN over time and in the future | IPDB LHN PCCF DAD HCD NACRS NRS OHP OMHS SDS ASTHMA CHF COPD HVI HYPER OCC ODD OMD ORAD CENSUS CONTACT RPDB OCR REF ESTSDB CIC INST ODB CAPE HNHBLHN Subregion Boundaries |
| 29 | Patterns and characteristics of care for patients with COPD following admission or visit to hospital in Southeast Ontario | CORRS CHF getag |
| 30 | Patterns of aggressive end of life care in gastrointestinal cancer - focus on palliative care referrals and ICU admissions | LHN PCCF CORRS DAD HCD NACRS NRS ODB OHP OMHS RPDB ADP ESAS |
| 31 | Patterns of brand and generic concrete use in Ontario | IPDB DIN DAD NACRS ODB OHP RPDB NMS |
| 32 | Patterns of Cardiovascular Drug Use Before and After Acute Kidney Injury | IPDB DIN LHN PCCF REF CORR DAD NACRS ODB OHP SDS HYPER ODD CENSUS CONTACT POP RPDB OLS |
| 33 | Patterns of care in chemotherapy delivery for testicular germ cell tumors: A population-based study | CPDB IPDB DIN LHN PCCF REF INST CORR DAD NACRS ODB OHP SDS CENSUS RPDB ALR OCR Testes and RPLND Both Database |
| 34 | Patterns of care in patients with diabetes and chronic kidney disease | CPDB IPDB DIN LHN INST CORR DAD HCD NACRS ODB OHP CHF COPD HYPER ODD RPDB CAPE ONMARG GDM CONTACT CIC OLS |
| 35 | Patterns of HbA1c and cholesterol testing among Ontarians with diabetes | CPDB IPDB DIN LHN PCCF REF DAD OHP ODD CENSUS RPDB CAPE OLS |

| # | Project Title | ICES Data |
|----|---|---|
| 25 | Patterns of Mortality among Adults with Intellectual and Developmental Disabilities | LHIN PCCF REF CCRS DAD HCD NACRS OHP OMHRS RAICA RAHC SDS CHF COPD HYPER ODD CONTACT RPDB ONMARG RAHICMDH OSSP OCR ORGO |
| 27 | Patterns of referral and treatment for melanoma and non-melanoma skin cancers within the South West region of Ontario | CPDB #PDB DAD NACRS ODB OHP OMHRS RPDB CAPE ONMARG EMERALD CIC INST |
| 28 | Patterns of referral and treatment for melanoma within Southwestern Ontario | CPDB #PDB LHIN PCCF REF INST CORR DAD HCD NACRS OHP SDS CENSUS CONTACT POP RPDB ODB ALR NDPP OCR PCPOP getseq |
| 29 | Patterns of Rehospitalizations after Mechanical Ventilation in Ontario | DN REF INST CCRS DAD NACRS ODB OHP RAICA RAHC SDS RPDB |
| 30 | Patterns of surgical treatment of benign prostatic hypertrophy in Ontario: Timing, Modalities, and Outcomes | CPDB #PDB DN LHIN PCCF REF INST DAD NACRS ODB OHP SDS HV CENSUS RPDB NMS |
| 31 | Patterns of Usage and Geographic Optimization of Preoperative Anesthesia Consultation | LHIN DAD NACRS OHP SDS ASTHM A CHF COPD HYPER OCCC ODD OMD ORAD CENSUS RPDB CPDB #PDB DN PCCF REF INST ODB CONTACT POP ONMARG DEMENTIA ORGO |
| 32 | Payment data for medical specialties | CPDB #PDB LHIN PCCF AVGPRICE STDPRICE OHP CENSUS CONTACT POP RPDB |

| # | Project Title | ICES Data |
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| 35 | PC Comprehensiveness and Setting Diversity | CPDB #PDB LHN PCCF REF OHP CAPE ERCLAM GAPP GPPPHS ARCHRY AHSC |
| 36 | PCICABS ratio variation and its influence in patients outcomes in Ontario | LHN REF DAD NACRS OHP SDS CHF COPD HYPER ODD CENSUS RPDB CCN SDS OLIS ORGO |
| 38 | PCMCH Performance Measurement Framework - Phase 1 | DAD HCD NACRS OHP OMHRS MOMBABY CENSUS CONTACT POP RPDB ORGO PCPCP ORGO |
| 39 | Pediatric vision screening, amblyopia detection, and the long-term economic burden in Ontario | CPDB #PDB DN PCCF REF INST AVGPRCE ESTSOB CCRS DAD HCD NACRS NRS ODB OHP OMHRS SDS MOMBABY POP RPDB ADP CAPE GAPP OCCI OHCAS ODD NMS |
| 37 | Peel Region Trends in Mental Health, Chronic Disease, and Childhood Disabilities | PCCF REF DAD SDS RPDB OCR |
| 38 | Perinatal Health Outcomes Associated with Prenatal Opioid Exposure: A Population-based Retrospective Cohort Study in Ontario | PCCF CCRS DAD HCD NACRS NRS ODB OHP OMHRS RAICA SDS ASTHMA CHF COPD HV HYPER MOMBABY OCCC ODD QMD ORAD CENSUS RPDB ONMARG NMS ORGO CC |
| 39 | Perioperative cost of urological intervention for urinary tract stones in autosomal dominant polycystic kidney disease | MOMBABY OCCC RPDB BORN PM25, NO2 and O3 exposures by postal code |
| 38 | Personalised Risk stratification for patients with prostate cancer (PRONTO) | OLIS |
| 38 | Personalized Medicine and Drug Response in Inflammatory Bowel Disease | #PDB DN LHN PCCF REF INST AVGPRCE CCRS DAD NACRS ODB OHP OMHRS SDS RPDB ADP OHCAS OCCI GDML Personalized Medicine Database |

| # | Project Title | ICES Data |
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| ☒ | Personalized Medicine and Drug Response in Pediatric Oncology | IPDB DIN LHN PCCF REF INST AVGP/ICE CCRS DAD NACRS ODB OHP OMHRS SDS RPDB ADP OHCAS OCCI GDML Personalized Medicine Database |
| ☒ | Persons with TBI who are repatriated to other acute hospitals after initial treatment at a trauma centre | DAD NACRS OHP SDS CONTACT RPDB AVGP/ICE ESTSOB RAICA RAHC ODB GAPP OCCI CIC gmsag |
| ☒ | Pertussis Vaccine Effectiveness in Ontario - Analysis of Administrative Data | IPHIS Pertussis Data and PHOL Pertussis Data |
| ☒ | Physician care at the end of life: Describing patterns of care and evaluating outcomes | CPDB IPDB DIN LHN PCCF REF INST AVGP/ICE ESTSOB CCRS DAD HCD NACRS NRS ODB OHP OMHRS RAICA RAHC SDS CHF COPD HYPER OCCC ODD OMD ORAD CENSUS CONTACT POP RPDB DEMENTIA ORGD CAPE |
| ☒ | Physician Compensation - Specialists | DIN REF CCRS DAD NACRS ODB OHP SDS COPD HYPER ODD CENSUS CONTACT RPDB |
| ☒ | Physician Compensation Project Update 2015/16 | CPDB IPDB AVGP/ICE STDP/IC E DAD OHP RPDB CAPE GAPP AHSC ARCHPAY GRPPHYS |
| ☒ | Physician Compensation Update 2016/17 | IPDB DIN LHN PCCF REF CORR DAD NACRS ODB OHP CHF HYPER CONTACT RPDB OLS |
| ☒ | Physician Compensation Update 2017/18 | CPDB IPDB PCCF REF AVGP/ICE ESTSOB OHP CAPE ERCLAIM GAPP PCPOP ARCHPAY AHSC GRPPHYS |

| # | Project Title | ICES Data |
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| ☒ | Physician health and its impact on their practice: The Ontario Physicians Health Study | #PDB DIN LHN PCCF AVGPRCE SIDPRIC E CCRS DAD HCD NACRS NRS ODB OHP OMHRS RAICA RAHC ASTHMA CHF COPD HIV HYPER OCC ODD OMD ORAD CENSUS CONTACT POP RPDB ADP CAPE OCCI ORGD PHYSNET The College of Physicians and Surgeons of Ontario (CPSO) Physician Database |
| ☒ | Physician's Opioid Prescribing Patterns in Ontario | CPDB #PDB DIN DAD NACRS ODB OHP CONTACT RPDB NMS |
| ☒ | Pneumococcal vaccination in patients with CLL | #PDB B DAD ODB CONTACT RPDB OCR |
| ☒ | Polysonnography testing and respiratory-related morbidity and mortality among individuals with idiopathic pulmonary fibrosis (IPF) | #PDB DIN PCCF REF DAD NACRS ODB OHP OMHRS SDS CHF COPD HYPER ODD OMD CONTACT RPDB ADP ORGD OCR |
| ☒ | Population Based Study of Maternal and Perinatal Outcomes in Women with Prosthetic Heart Valves | #PDB PCCF REF DAD OHP OMHRS ASTHM A COPD HYPER ODD CENSUS CONTACT POP RPDB NMS CIC #PDB PCCF REF DAD NACRS OHP OMHRS ODD CENSUS CONTACT POP RPDB SDS |
| ☒ | Population health and health care utilization in Mississauga Ontario | LHN PCCF REF INST AVGPRCE CCRS DAD HCD NACRS NRS ODB OHP OMHRS SDS ASTHMA CHF COPD HYPER ODD OMD CENSUS CONTACT POP RPDB ADP CAPE GAPP OCCI OHCAS ONMARG CCHS CIC getag |

| # | Project Title | ICES Data |
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| 996 | Population health indicators to support public health and health system surveillance and planning in Ontario | LHN PCCF REF DAD NACRS OHP OMHRS SDS ASTHM A CHF COPD HYPER ODD OMD CENSUS CONTACT POP RPDB |
| 997 | Population study of home-time after stroke in Ontario (short title: HT-OSR) | LHN PCCF DAD NACRS OHP OMHRS RPDB CIC MCSCS LOC |
| 998 | Population-based Risk Estimation to Drive Improved personalized Care and Translation in Chronic Kidney Disease (PREDICT CKD) Lifestyle | DN REF CORR DAD NACRS ODB OHP SDS RPDB OLIS ORGO CCHS ORRS |
| 999 | Population-based study of cardiovascular and cerebrovascular morbidity and mortality in patients with gout on tolevastatins/allopurinol | IFDB DN LHN PCCF REF INST DAD NACRS ODB OHP SDS CHF COPD HYPER ODD ORAD CENSUS RPDB OLIS ONMARG ORGO |
| 1000 | Post-Migration Diagnosis of Mood and Anxiety Disorders among First-Generation Migrant Groups in Ontario | DAD NACRS OHP OMHRS RPDB ONMARG ORGO CIC |
| 1001 | Post-Bleed Management of Antithrombotic Therapy (PANTHER) | CPDB IFDB DN LHN PCCF REF INST DAD NACRS ODB OHP OMHRS SDS ASTHM A CHF COPD HYPER ODD OMD CENSUS CONTACT POP RPDB ONMARG CCRS OCR HCD RAICA RAIRC |
| 1002 | Post-discharge outcomes and service utilization among male and female psychiatric inpatients with a history of trauma | LHN PCCF DAD NACRS ODB OHP OMHRS ASTHM CHF COPD HV HYPER MOMBABY OCC ODD OMD ORAD RPDB ORGO CCRS |

| # | Project Title | ICES Data |
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| 1003 | Postoperative complications and failure to rescue in adult patients undergoing cardiac surgery | #PDB DN LHIN PCCF REF INST CORS CORR DAD HCD HOBIC NACRS ODB OHP RAICA ASTHM ACHF COPD HYPER ODD CENSUS RPDB ORGD CORR OBS OCCI ETHNIC CCN OLS |
| 1004 | Postpartum depression Action toward Causes and Treatment (PACT) - Canada Predictive Analytic Models of PPD Risk | EMRALD |
| 1005 | Postpartum maternal opioid therapy and the risk of adverse neonatal outcomes – a retrospective cohort study | CPDB #PDB DN PCCF REF INST DAD NACRS ODB OHP SDS MOMBABY CENSUS RPDB ONMARG NMS ORGD |
| 1006 | Post-release health care utilization in an HIV+ population | CPDB #PDB PCCF INST DAD NACRS OBS OHP OMHRS HIV RPDB Data from Ministry of Community Safety and Correctional Services already brought to ICES for project P090 SDS 000 CHC |
| 1007 | Post-surgical use of low-molecular weight heparins (LMWH) in Ontario | OHP |
| 1008 | Post-Surgical Use of Low-Molecular Weight Heparins (LMWH) in Ontario | DN DAD NACRS ODB SDS RPDB OHP |
| 1009 | Potentially inappropriate medication use for CKD patients followed in multi-care kidney clinics | #PDB DN LHIN PCCF REF CORR DAD NACRS OBS OHP HYPER ODD CONTACT RPDB OLS ORRS |
| 1010 | Practice patterns among early-career primary care physicians and workforce planning implications: A mixed-methods study | #PDB DN PCCF REF AVGPRICE ESTSOB DAD NACRS OBS OHP SDS OHP COPD HYPER ODD OHD CENSUS CONTACT RPDB OLS PCCF ORGD PCPOP CHC |

| # | Project Title | ICES Data |
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| 1011 | Practice Patterns and Long-Term Health Outcomes of Bilateral Oophorectomy at Hysterectomy | IPDB LHN INST DAD NACRS ODB OHP OMHRS SDS CHF HYPER MOMBABY ODD OMD CENSUS CONTACT RPDB ONMARG DEMENTIA ORGD CCHS CIC OCR g99agj ETHNIC OHS |
| 1012 | Practice patterns in knee arthroscopy: an evaluation based on QBFunding reforms | CPDB IPDB LHN PCCF REF INST DAD HCD NACRS NRS OHP SDS ASTHMA CHF COPD HYPER ODD OMD ORAD CENSUS CONTACT POP RPDB HCDMDH ONMARG ORGD |
| 1013 | Practice patterns of FPGP psychotherapists and psychiatrists | IPDB PCCF REF INST DAD NACRS OHP SDS COPD ODD CENSUS CONTACT RPDB OUS OCR |
| 1014 | Practice patterns of Ontario physicians working in 'boutique' medical clinics (Part 1) | CPDB IPDB LHN PCCF AVGP/PRC CCRS DAD HCD NACRS NRS ODB OHP OMHRS SDS CONTACT RPDB ADP CAPE GAPP OHCAS OCCI g99agj Ontario Physicians in Boutique Medical Practices |
| 1015 | Predicting and meeting the need for long-term care in the population | IPDB LHN PCCF REF INST AVGP/PRC STDP/RC E CCRS DAD HCD NACRS NRS ODB OHP OMHRS RAHC SDS ASTHMA CHF COPD HIV HYPER ODD OMD CONTACT RPDB ADP CAPE GAPP OHCAS OCCI Estab |
| 1016 | Predicting high-intensity opioid prescribes in Long-Term Care(LTC) | ORRS |
| 1017 | Predicting Mortality and Stroke Recurrence in Patients Post-Stroke: An Evidence-Based Risk Score | CCRS DAD NACRS CONTACT RPDB OSR |

| # | Project Title | ICES Data |
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| 1018 | Predicting resource utilization and costs in frail and non-frail patients undergoing cardiac surgery in Ontario | DN PCCF ESTSOB DAD HCD NACRS OOB OHP RAICA RAHC SDS RPDB CCN AVGP/RE CCRS CORR NRS OMHS CHF COPD HYPER ODD OMD ADP CAPE OCR |
| 1019 | Predicting the Future Burden of the Inflammatory Bowel Diseases: A Study of the Canadian Gastro-Intestinal Epidemiology Consortium (CanGIEC) | IPDB PCCF AVGP/RE ESTSOB CCRS DAD HCD NACRS NRS OOB OHP OMHS SDS OCCO CENSUS CONTACT RPDB ADP CAPE ERCLAIM GAPP OCCI ORCAS |
| 1020 | Prediction and Application of Disability-Free Survival in Patients undergoing Cardiac Procedures | IPDB INST CCRS DAD NACRS OOB OHP SDS ASTHMA CHF COPD HYPER ODD OMD CENSUS POP RPDB OUS ETHNIC ORGD CCN MHSB CPDB CORR NRS ADP |
| 1021 | Prediction Modelling Using Artificial Intelligence A collaborative program between ICES and Vector Institute | CPDB IPDB DN LHN PCCF REF INST CCRS DAD HCD HOBIC NACRS NRS OOB OHP OMHS RAICA RAHC SDS ASTHMA A CHF COPD HIV HYPER MOMBABY OCCO ODD OMD ORAD CENSUS CONTACT POP RPDB HCES ADP CAPE CENSUSDA ESRALD CCHS OCR |
| 1022 | Prediction of 30-day readmissions for heart failure patients in Ontario | IPDB PCCF DAD OOB OHP SDS ASTHMA CHF COPD HYPER ODD RPDB SchenCHF EHRMG EFFECT EFFECT 2 |

| # | Project Title | ICES Data |
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| 1023 | Prediction of Risk of Cardiovascular Disease in Women Diagnosed with Early Stage Breast Cancer | #PDB DIN LHN PCCF REF INST AVGP/CE ESTSOB CCRS CORR CPRO DAD HCD HOBIC NACRS NRS ODB OHP OMHRS RAICA RAHC SDS CHF COPD HYPER ODD OMD CENSUS CONTACT POP RPDB OLS EMERALD ORGD ALR NADP OBSP OCR Early stage breast cancer (ESBC) getag |
| 1024 | Prediction of severe maternal morbidity among women who give birth following assisted reproductive technology | PCCF REF DAD OHP MOMBABY ORAD CENSUS RPDB ONMARG CIC BORN OMHRS ODD |
| 1025 | Predictors of adherence among post-menopausal women receiving adjuvant endocrine therapy for breast cancer in Ontario, Canada | LHN PCCF INST DAD NACRS OHP OMHRS ASTHMA CHF COPD HIV HYPER MOMBABY OCCC ODD OMD ORAD CENSUS RPDB ONMARG CIC LHN Dementia |
| 1026 | Predictors of adverse respiratory events associated with incident opioid use among older adults with COPD | #PDB DIN PCCF REF DAD HCD NACRS ODB OHP OMHRS SDS CHF COPD HYPER ODD OMD CONTACT RPDB OCR ORGD |
| 1027 | Predictors of death and dialysis dependence in patients with dialysis requiring AKI | REF CORR DAD OHP SDS RPDB Acute Kidney Injury Registry |
| 1028 | Predictors of Hospitalization in Children Presenting to the Emergency Department with Croup | CHF |
| 1029 | Predictors of Oral Anticoagulant-related Adverse Events among Seniors following Hospital Discharge: A population-based Cohort Study | DIN PCCF REF DAD ODB OHP SDS HYPER ODD CENSUS RPDB ETHNIC CIC OMHRS CAPE CCRS CORR HCD RAICA RAHC DEMENTIA |

| # | Project Title | ICES Data |
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| 1030 | Predictors of stroke and bleeding in elderly Ontario patients with Newly-recognized Atrial Fibrillation | #PDB DIN LHN PCCF REF INST AVGP/ICE ESTSOB DAD NACRS OOB OHP SDS CHF COPD HYPER ODD OMD CENSUS CONTACT RPDB OLS OCR ORGD DEMENTIA |
| 1031 | Predictors of Wait-Times for Patients with Severe Aortic Stenosis Undergoing Transcatheter Aortic Valve Implantation: A Pan-Canadian Study | #PDB DIN LHN PCCF REF INST CCRS DAD NACRS NRS OOB OHP SDS CHF COPD HYPER ODD OMD RPDB CCN St Boniface General Hospital (Manitoba) local TAVI database INESSS (Institut national d'excellence en santé et en services sociaux) (Quebec) TAVI data New Brunswick Heart Centre local TAVI Database Nova Scotia's QE II Health Sciences Centre TAVI Data Libin Cardiovascular Institute of Alberta/Foothills Medical Centre - Approach Database INESSS (Institut national d'excellence en santé et en services sociaux) (Quebec) TAVI data University of Alberta Hospital TAVI local database Regina General Hospital TAVI local database Cardiac Services BC TAVI Registry Health Sciences Centre (Newfoundland) local TAVI database |
| 1032 | Predictors, Patterns, and Outcomes of Opioid Use in Patients with Inflammatory Bowel Disease | CPDB #PDB DIN PCCF INST AVGP/ICE ESTSOB CCRS DAD HCD NACRS NRS OOB OHP OMHRS SDS ASTHMA OCCC ORAD CONTACT RPDB ADP CAPE GAPP OCCJ OHCAS NMS OCR gelaac s RAIC A RAHC |
| 1033 | Pregnancy in Women with Disabilities: Using Novel Methods to Characterize Risk | #PDB PCCF DAD NACRS OOB OHP OMHRS SDS ASTHMA CHF COPD HYPER MOMBABY OCC ODD ORAD CONTACT RPDB CAPE ONMARG CIC ORGD HIV |
| 1034 | Pregnancy outcomes after appendectomy | #PDB LHN PCCF REF INST DAD NACRS OHP SDS MOMBABY CENSUS CONTACT POP RPDB BORN |

| # | Project Title | ICES Data |
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| 1035 | Pregnancy Outcomes in Patients with Psoriasis | IPDB REF DAD OHP MOMBABY CENSUS RPDB HYPER ODD CONTACT |
| 1036 | Pregnancy outcomes in women with chronic kidney disease | IPDB LHN PCCF REF CCRS DAD NACRS OHP SDS HYPER MOMBABY ODD CONTACT RPDB OLS GDML |
| 1037 | Pregavid cardiometabolic risk factor profile and subsequent glucose challenge test in pregnancy | PCCF DAD OHP SDS MOMBABY ODD RPDB OLS ETHNIC |
| 1038 | Premature mortality among children and youth in Ontario | LHN DAD NACRS OHP SDS MOMBABY CENSUS RPDB ORGD CIC |
| 1039 | Premature mortality and multimorbidity among persons living with diabetes | PCCF REF AVGPRCE CCRS DAD HCD NACRS NRS ODB OHP OMHRS SDS ASTHMA CHF COPD HYPER OCCC ODD OMD ORAD CENSUS CONTACT RPDB APF CAPE GAPP OCCI ONCAS ONMARG CIC OCR gesag |
| 1040 | Prenatal biochemical screening and the long-term risk of cardiovascular disease, cancer and all-cause mortality | ORGD |
| 1041 | Prenatal Opioid Exposure and Neonatal Abstinence Syndrome: A Research Project with Indigenous Peoples in Ontario First Nations | INST |
| 1042 | Prescribing Cascades | IPDB LHN PCCF REF CCRS DAD HCD NACRS NRS ODB OHP RAHIC SDS CHF COPD HYPER ODD CONTACT RPDB OCR |
| 1043 | Prescribing of high strength opioid formulations in Ontario: Policy Evaluation | DIN DAD ODB OHP RPDB OCR POP NAS PCCF NACRS |

| # | Project Title | ICES Data |
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| 1044 | Prescribing trends of direct acting antivirals (DAAs) for the treatment of hepatitis C in Ontario | CPDB IPDB DIN LHN PCCF REF DAD NACRS ODB OHP OMHRS ASTHM A CHF COPD HIV HYPER ODD RPDB OCR NMS |
| 1045 | Prescription Opioid Use after Back Surgery in Ontario | DIN LHN PCCF REF DAD NACRS ODB OHP OMHRS SDS HYPER ODD CONTACT RPDB ORGO |
| 1046 | Prescription Opioid Use after Back Surgery in Ontario | DIN LHN PCCF REF DAD NACRS ODB OHP SDS CONTACT RPDB OCR ORGO PCCF REF AVGPRICE ESTS0B CORR RAICA RAIHC OMD ADP CAPE GAPP OCCI OHCAS |
| 1047 | Prescription opioid use after major surgery | OHP |
| 1048 | Prevalence and Correlates of Medications Associated with QTc Prolongation | CCRS NRS OMHRS SDS ONMARG |
| 1049 | Prevalence and outcomes of acute kidney injury among hospitalized children with diabetic ketoacidosis in Ontario | IPDB CORR DAD NACRS OHP SDS RPDB OLIS AVGPRICE CCRS HCD NRS ODS OMHRS ODD ADP CAPE GAPP OCCI OHCAS |
| 1050 | Prevalence of blood borne viral infections (HIV, HBV, HCV) among people seeking fertility services in Ontario | PCCF DAD NACRS OHP SDS HIV CONTACT RPDB |
| 1051 | Prevalence of blood product use among individuals not eligible for the Ontario Health Insurance Plan | DIN INST DAD NACRS SDS RPDB |
| 1052 | Prevalence of diagnosed and self-reported mood and anxiety disorders in first-generation migrant populations and ethnic minority groups in Ontario | IPDB DIN LHN PCCF INST AVGPRICE ESTS0B CCRS DAD HCD NACRS NRS ODB OHP OMHRS RAICA RAIHC SDS ODD CENSUS RPDB ADP CAPE ONMARG POPCAN ACC CIC RPDB ONMARG |

| # | Project Title | ICES Data |
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| 1053 | Prevalence of Direct Oral Anticoagulant (DOAC) Use in Kidney Transplant Patients | DN PCCF REF CORR DAD NACRS ODB OHP SDS CONTACT RPDB OLIS |
| 1054 | Prevalence of emergency department and family physician visits that potentially could be managed by pharmacists | CPDB #PDB LHN REF INST NACRS OHP CENSUS POP RPDB CAPE PCPOP DAD |
| 1055 | Prevalence of heterozygous familial hypercholesterolemia in Ontario | DN PCCF REF DAD NACRS ODB OHP SDS HYPER ODD CENSUS RPDB CHS CIC OCR ORGD GML OLIS |
| 1056 | Prevalence of mental illness among individuals in provincial correctional centres | CPDB #PDB DN PCCF INST CCRS DAD NACRS ODB OHP ASTHM ACHF COPD HYPER ODD OMD CONTACT RPDB CPDB #PDB INST ODB ASTHM CHF COPD HIV HYPER ODD CHC |
| 1057 | Prevalence of mitochondrial disease and psychiatric conditions across Ontario | PCCF REF DAD NACRS ODB OHP OMHRS SDS FOP RPDB ONMARG ORGD AVGP/ICE ESTSOB CCRS HCD NRS SDS ADP CAPE GAPP OCCI OHCAS OCR |
| 1058 | Prevalence of Parkinson's by age and gender | #PDB DN LHN PCCF AVGP/ICE CCRS CPRO DAD HCD NACRS NRS ODB OHP OMHRS RPDB |
| 1059 | Prevalence, Characteristics and Impact of Direct Discharge to Home from Intensive Care Units in Ontario | #PDB LHN PCCF REF INST AVGP/ICE ESTSOB CCRS DAD HCD NACRS NRS ODB OHP OMHRS SDS CONTACT RPDB ADP CAPE GAPP OCCI OHCAS |

| # | Project Title | ICES Data |
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| 1060 | Prevalence, risk factors and management of extreme hypertriglyceridemia in Ontario | IPDB DIN DAD NACRS ODB OHP HYPER ODD POP RPDB CAPE OLS |
| 1061 | Preventable readmissions revisited | CPDB IPDB LHIN INST DAD NACRS ODB OHP CENSUS RPDB CAPE ONMARG |
| 1062 | Primary Care Organizational Attributes Associated with Quality Care | CPDB IPDB PCCF AVGPRICE ESTS OB DAD NACRS ODB OHP OMHRS ASTHMA CHF COPD HYPER ODD OMD CENSUS CONTACT RPDB CAPE CC CHC OBSP (see) Organizational Survey |
| 1063 | Primary care physician comprehensiveness algorithm comparison with MOH | CPDB IPDB LHIN PCCF REF DAD OHP SDS CONTACT RPDB CAPE OBSP OCR CHC MOHLTC Comprehensive Primary Care Physician List |
| 1064 | Primary care physician visits and quality of care for hemodialysis patients | IPDB LHIN PCCF INST CCRS DAD HCD NACRS NRS OHP OMHRS SDS |
| 1065 | Primary care provider and population characteristics associated with age of diagnosis of Autism Spectrum Disorder among kindergarten children | CPDB IPDB PCCF ESTS OB DAD NACRS OHP SDS MCMBABY CENSUS RPDB CAPE ONMARG CC EDI (Early Development Instrument) |
| 1066 | Primary care reform and medication appropriateness for seniors: A comparative study of two provinces | IPDB DIN PCCF REF AVGPRICE ESTS OB DAD NACRS ODB OHP SDS CHF COPD HYPER ODD OMD CENSUS CONTACT RPDB OLS |

| # | Project Title | ICES Data |
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| 1067 | Primary Health Care as the Foundation for Health System Performance, Integration and Sustainability | LHN PCCF REF CCRS DAD HCD NACRS NRS ODB OHP OMHRS SDS ASTHMA CHF COPD HYPER OCCC ODD OMD ORAD CENSUS CONTACT RPDB ADP ENCLAIM LOC OCCI OLIS OTR CFDR CIC OCR ORGO getag |
| 1068 | Procedural and Long Term Clinical Outcomes after Bifurcation Stenting with Drug Eluting Stents | DN REF DAD NACRS ODB OHP SDS CHF HYPER ODD RPDB Bifurcation Study Data |
| 1069 | Profiling Hospital Performance Based on Mortality and Readmission Risk-Standardized Rates After Transcatheter Aortic Valve Implantation in Canada | IPDB DN LHN PCCF REF INST CCRS DAD NACRS NRS ODB OHP SDS CHF COPD HYPER ODD OMD RPDB CCN OMHRS |
| 1070 | Profiling long-term care residents in terms of demographics and costs | CPDB IPDB LHN PCCF REF INST AVGPRCE ESTSOB CCRS DAD HCD NACRS NRS ODB OHP OMHRS RAHC SDS CENSUS CONTACT POP RPDB ADP getag Ownership Data |
| 1071 | Program of Integrated Care for Patients with Chronic Obstructive Pulmonary Disease and Multiple Comorbidities (PIC-COPD+): A Randomized Trial | CPDB IPDB DN LHN PCCF REF INST AVGPRCE STDPRIC ECCRS DAD HCD NACRS NRS ODB OHP OMHRS SDS COPD CONTACT RPDB ADP CAPE GAPP OHCAS OCCI PIC-COPD datasets- TEHG and SRHC |
| 1072 | Progressive degeneration from onset in pediatric multiple sclerosis | CPDB IPDB DN LHN PCCF REF DAD HCD NACRS NRS ODB OHP OMHRS SDS ASTHMA A.CHF COPD HYPER ODD OMD CENSUS POP RPDB Canadian Pediatrics Demyelinating Disease Program Database |

| # | Project Title | ICES Data |
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| 1073 | Promoting Access and Care through Centres of Excellence in Inflammatory Bowel Disease (PACE-IBD) | DAD RPDB |
| 1074 | Promoting deceased organ and tissue donation registration in family physician waiting rooms (RegisterNow-1 Trial) | IFDB LHN PCCF REF OHP CONTACT RPDB ODR CORR DAD NACRS SDS ODD ONMARG List of participating physicians from RegisterNow Trial |
| 1075 | Propensity-matched analysis of efficacy of statins in reducing adverse cardiovascular events in women treated for early stage breast cancer | DAD NACRS OHP RPDB |
| 1076 | Prostate Cancer Screening in Ontario: A Population-based Assessment of PSA Testing | IFDB PCCF DAD NACRS ODR OHP OMHRS SDS ASTHMA CHF HYPER ODD OMD RPDB ALR NDRP OCR ORGD OLIS |
| 1077 | Psychostimulants and pregnancy (feasibility study) | DAD NACRS ODR OHP RPDB OLIS |
| 1078 | Public attitudes about private sector involvement in research studies based on administrative data | Qualitative information collected in the context of four focus groups with members of the general public |
| 1079 | Quality And Nursing Home Staffing: Does Profit Status Make a Difference? | INST CCRS RPDB data_lch Staff Admin and DOC Data - Longta |
| 1080 | Quality of Care and Mortality Following Stroke In Individuals With Schizophrenia | PCCF REF DAD NACRS ODR OHP OMHRS HYPER ODD CENSUS RPDB RCSN IFDB |
| 1081 | Quality of care for localized invasive bladder cancer: a population-based study | CPDB IFDB DN LHN PCCF REF INST CCRS DAD HCD NACRS NRS ODR OHP OMHRS RAHC SDS ASTHMA A CHF COPD HV HYPER OCOC ODD OMD ORAD CONTACT RPDB ADP ONMARG ETHNIC DEMENTIA ORGD ALR OCR geneg Bladder Cancer Database |

| # | Project Title | ICES Data |
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| 1082 | Quality of Care for Thyroid Surgery in Ontario: Impact of the CCO Quality Based Procedure Implementation | LHN PCCF AVGPRICE CCRS DAD HCD NACRS NRS ODB OHP OMHRS SDS ASTHMA CHF COPD HV HYPER OCCC ODD OMD ORAD CENSUS RPDB ADP CAPE OCR PCCF REF OLS ONMARG ALR CIC ORGD CONTACT POP |
| 1083 | Quality of care of critical limb ischemia and vascular claudication patients | PCCF AVGPRICE ESTSDB CCRS DAD HCD NACRS OHP OMHRS SDS CENSUS RPDB CAPE OCCI ONMARG |
| 1084 | Quality of the Diagnostic Management for Patients with Muscle Invasive Bladder Cancer | IPDB DN PCCF REF INST CCRS DAD HCD NACRS NRS ODB OHP SDS OCR Bladder Pathology Disease RPDB ONMARG ORGD OMHRS |
| 1085 | Quantifying the burden of and risk factors for early COPD | CPDB IPDB LHN PCCF DAD NACRS OHP OMHRS RPDB CAPE CIC PCPOP |
| 1086 | Quantifying the burden of and risk factors for early COPD: Part 2 | CCRS DAD HCD HOBIC NACRS NRS OHP OMHRS RPDB |
| 1087 | Quantifying the impact of marginalization on ankle fracture patients in Ontario | IPDB LHN PCCF REF AVGPRICE STDPRIC E_CCRS DAD HCD NACRS NRS ODB OHP OMHRS RAICA SDS ODD RPDB ADP CAPE HCDMDH ONMARG OCCI |
| 1088 | Quantifying the risk of type 2 diabetes in pregnant women | IPDB DN LHN PCCF REF DAD NACRS ODB OHP OMHRS SDS MOMBABY ODD CENSUS RPDB OLS ETHNIC BORN CIC |

| # | Project Title | ICES Data |
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| 1089 | QULI: Patterns of care following rehabilitation hospital discharge for hip fracture | CPDB #PDB DN LHN PCCF REF NST CCRS DAD HCD NACRS NRS ODB OHP OMHS SDS CENSUS CONTACT POP RPDB DEMENTIA |
| 1090 | QULT-LTC Trajectory: Longitudinal trajectories of health & health care service use in men and women waiting for long term care | CPDB #PDB DN PCCF NST CCRS DAD HCD NACRS NRS ODB OHP OMHS RAHC SDS ASTHM A CHF COPD HIPER ODD OMD ORAD CONTACT RPDB DEMENTIA |
| 1091 | Radiation and chemotherapy costs during initial phase of cancer care: comparison between 4 types of cancer diagnosed with greatest frequency | CPDB #PDB DN PCCF REF NST AVGPRCE STDPRIC E CCRS DAD HCD NACRS NRS ODB OHP OMHS SDS CONTACT RPDB ADP ALR NDPP OCR ORGD Wholesale Cancer Drug Costs |
| 1092 | Radiotherapy for Cancer in the ICU - A population-based analysis | CCRS HCD NRS OMHS ADP |
| 1093 | Raising Awareness of the Burden of Giant Cell Arteritis: Occurrence, healthcare use, costs and health outcomes | CPDB #PDB DN LHN PCCF REF NST AVGPRCE ESTSOB CCRS DAD HCD NACRS NRS ODB OHP OMHS RAICA RAHC SDS ASTHMA CHF COPD CENSUS CONTACT POP RPDB ADP HCDMDH OCCI OHCAS ONMARG ALR NDPP OCR ORGD ESAS PCPOP |
| 1094 | Rapid Opioid Tapering and Adverse Events | NDPP |
| 1095 | Rate of cancer screening by area income, immigration status and primary care in Ontario by LHIN and subregion | CPDB #PDB LHN PCCF DAD OHP SDS CENSUS CONTACT RPDB CAPE CIC OSIP OCR REF CHC Toronto Neighbourhood Postal Code Crosswalk File |

| # | Project Title | ICES Data |
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| 1096 | Rates and risk factors for death by suicide during inpatient psychiatric hospitalization in Ontario, Canada | LHN PCCF DAD NACRS OHP OMHRS RPDB ORGO |
| 1097 | Rates of minimally invasive surgery for invasive cervix cancer: a population based study | RPDB LHN INST DAD NACRS OHP SDS RPDB OCR |
| 1098 | Real world health services utilization and outcomes after BRCA1/2 testing in Ontario | RPDB LHN INST DAD NACRS ODB OHP SDS CENSUS CONTACT RPDB NDPP ORSP OCR ORGO %getag Genetic testing data |
| 1099 | Receipt of restorative care and rehabilitative therapy in Ontario's LTC homes and its association with reduced resident disamentment | DIN LHN PCCF AVGPRICE STDPRICE ECCRS CPRO DAD NACRS NRS ODB OHP OMHRS RAICA ASTHMA CHF COPD HYPER ODD OMD ORLO RPDB |
| 1100 | Receipt of Surgery and its Associated Outcomes in Ontario Long-Term Care Residents | CPDB RPDB DIN LHN PCCF REF INST AVGPRICE ESTSOB OCCRS CPRO DAD HCD NACRS OHP OMHRS RAICA RAIC SDS CHF COPD HIV OCCC ODD OMD ORAD CENSUS CONTACT POP RPDB DEMENTIA ORGO |
| 1101 | Reciprocal associations of psoriasis and psoriatic arthritis with mood and psychotic disorders | CPDB RPDB DIN PCCF REF INST DAD NACRS ODB OHP SDS ODD CENSUS CONTACT POP RPDB %getag |
| 1102 | Recovery After AKI Requiring Dialysis | SDS RPDB ORGO ORRS |
| 1103 | Recruitment and retention of physicians in rural communities: a longitudinal analysis of administrative health services data | CPDB RPDB LHN ESTSOB DAD NACRS OHP ASTHMA CHF COPD HYPER ODD CENSUS RPDB CAPE GAPP DEMENTIA AVGPRICE POP ONMARG PCPOP |

| # | Project Title | ICES Data |
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| 1104 | Red Blood Cell Transfusion in Palliative Care: A Retrospective Observational Cohort Study | LHN PCCF INST AVGPRICE ESTSOB CCRS DAD NACRS NRS OHP RAHC ASTHM A CHF COPD HYPER ODD OMD ORAD CENSUS RPDB ORGO HCD ODB OMHRS SDS ADP CAPE GAPP OCCI OHCAS OPCPD (The Ottawa Hospital Palliative Care Patient Dataset) Dataset #2: Transfusions Dataset Dataset #1: Patient data |
| 1105 | Reducing hospital and long term care facility Clostridial infection rates by understanding sources of infection | DAD NACRS ODB RPDB DN PCCF INST SDS CONTACT IMS Dataset |
| 1106 | Reducing low value cardiac testing | DN REF DAD NACRS ODB OHP HYPER ODD RPDB PCCF CN IPDB SDS COPD ANRO - Echo WISELY REDCap data base Cardiac Case Network Echocardiography Registry (CCN-ER) Echo WISELY masterlist - physician identifies |
| 1107 | Reducing Readmission after Acute Coronary Syndrome Hospitalization by Identifying Important Determinants and Effective Strategies to Improve Care | IPDB DN LHN PCCF REF INST DAD NACRS ODB OHP OMHRS SDS ASTHM A CHF COPD HYPER MOMBABY ODD OMD CENSUS CONTACT RPDB EFFECT EFFECT2 |
| 1108 | Regional anesthesia and outcomes: a population-based comparative effectiveness and validation study | IPDB INST AVGPRICE DAD NACRS ODB OHP SDS ASTHM CHF COPD HYPER ODD OMD CENSUS RPDB CAPE NMS Ottawa Hospital PerioP validation data set |
| 1109 | Regional Variation and Determinants of Organ Donation Registration Status in Ontario | CC |
| 1110 | Regional variation in TAVR capacity, wait-times and outcomes | DN LHN PCCF REF DAD NACRS NRS ODB OHP OMHRS SDS CHF COPD HYPER ODD RPDB CN DEMENTIA |

| # | Project Title | ICES Data |
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| 1111 | Representation Learning on EHR Data | CPDB #PDB DIN LHN PCCF REF DAD NACRS ODB OHIP OHRS SDS MOMBABY OCCC CENSUS CONTACT POP RPDB HCES CENSUSDA NLSY QLS EMERALD ETHNIC NIS ODD BORN ASTHM AHRV ODD ERCLAIM |
| 1112 | Representation of Black persons in the Ontario provincial correctional system | PCCF REF RPDB MCSCS ONMARG |
| 1113 | Reproductive health needs of young adult females with cancer | CPDB #PDB PCCF REF DAD NACRS OHIP SDS MOMBABY CENSUS CONTACT POP RPDB ONMARG ALR OCR ODB NDPP |
| 1114 | Resource utilization and costs in the care of patients with hematologic malignancies | #PDB LHN PCCF INST AVGPRE CCRS DAD HCD NACRS NRS ODB OHIP OHRS SDS CENSUS RPDB ALR NDPP OCR |
| 1115 | RESPECT Pancreatic Cancer | LHN PCCF CCRS DAD HCD NACRS ODB OHIP RAICA RAIHC SDS ASTHM ACHF COPD HV HYPER ODD OMD RPDB ALR OCR #PDB DIN NRS ORGD CIC NDPP %getradiationcost %getchemocost OCCC ORAD |
| 1116 | RESPECT Pancreatic Cancer and Home Care | LHN PCCF CCRS DAD HCD NACRS ODB OHIP RAICA RAIHC SDS ASTHM ACHF COPD HV HYPER ODD OMD RPDB ALR OCR |

| # | Project Title | ICES Data |
|------|---|---|
| 1117 | Retention in and attrition from HIV/Hepatitis C care settings in Ottawa and Toronto | CPDB #FDB PCCF AVGPRCE DAD NACRS OGB OHP OMHRS SDS ASTHMA CHF COPD HVI HYPER ODD OMD CONTACT RPDB CAPE CIC OCR ORGO data_cbc OCCC ORAD DEMENTIA CENSUS TORONTO and Immunodeficiency Clinic data Toronto Community Hepatitis C Program (TCHCP) registry |
| 1118 | Retinal Detachment Repair Procedure in Two Toronto Hospitals: A Validation Study | INST DAD NACRS OHP SDS RPDB ODD Dataset#1: St Michael's Hospital Data Dataset#2: Sunnybrook HSC Data |
| 1119 | Rheumatology serology test volumes in Ontario | OLS |
| 1120 | Risk adjustment models for cardiac conditions | #FDB DIN REF INST CCRS DAD NACRS OGB OHP SDS ASTHMA CHF COPD HYPER ODD CONTACT RPDB DEMENTIA ORGO LINK CENSUS OLS ONMARG ETHNIC CCN |
| 1121 | Risk factors and timing of venous thromboembolism in patients undergoing liver resection for colonic metastases | #FDB DIN REF INST CCRS DAD NACRS NRS OGB OHP SDS OCCC RPDB OCR Liver Cohort |
| 1122 | Risk of breast cancer among women previously exposed to computed tomography (CT) examination of the thorax within pregnancy or postpartum | BORN |
| 1123 | Risk of fracture in patients with thyroid cancer | PCCF REF DAD NACRS OGB OHP SDS ASTHMA CHF COPD ODD CENSUS CONTACT RPDB OCR |
| 1124 | Risk of Future Maternal Cardiovascular Diseases following Twin Gestations Complicated by Hypertensive Disorders of Pregnancy | CPDB #FDB DAD NACRS OHP SDS CHF HYPER MOMBABY RPDB ETHNIC CIC ODD |
| 1125 | Risk of genitourinary infections in patients treated with SGLT2 inhibitors | PCCF DAD NACRS OHP OMHRS SDS CENSUS RPDB ONMARG MCSS ORGO |

| # | Project Title | ICES Data |
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| 1126 | Risk of Long-Term Chronic Kidney Disease and Hypertension Among Childhood Cancer Survivors: A Matched Cohort Study | IPDB DN LHN PCCF REF CORR DAD NACRS OHP SDS MOMBABY CENSUS CONTACT POP RPDB POGONIS |
| 1127 | Risk of Major CV Events among Heart Failure with Preserved Ejection Fraction (HFpEF) Patients and High-Risk Subgroups | DAD NACRS OOB OHP SDS ASTHMA CHF COPD HYPER OOD RPDB EFFECT SCHNCHF EMERG EFFECT2 CCN ORGD |
| 1128 | Risk of Multiple Sclerosis after Concussion(s) in Adolescence | DAD MOMBABY CONTACT RPDB |
| 1129 | Risk of Periprosthetic Femoral Fracture, Death, and Complications Associated With Cemented versus Uncemented Hip Arthroplasty | CPDB IPDB DN LHN PCCF REF INST CCRS CPROD DAD HCD NACRS OOB OHP SDS CENSUS CONTACT POP RPDB ONMARG DEMENTIA ORGD CJRR g99a9g |
| 1130 | Risk of sudden death in methadone-treated patients prescribed serotonin reuptake inhibitors (SRIs) | DAD OHP POP RPDB CCN IPDB CHF |
| 1131 | Risk prediction algorithms for cardiovascular diseases in individuals with common mental disorders | DAD NACRS OHP OMHRS CONTACT RPDB OLS CCHS ORGD |
| 1132 | Rurality index score and pediatric neuro-oncological outcome in Ontario | DAD NACRS OHP RPDB OCR OBSP |
| 1133 | Safety and Effectiveness of DOAC for Stroke Prevention in Non-Valvular Atrial Fibrillation: A Multi-Database Cohort Study with Meta-Analysis | CPDB IPDB DN PCCF REF DAD NACRS OOB OHP SDS ASTHMA A CHF COPD HIV HYPER OCC OOD OMD ORAD CENSUS CONTACT RPDB ONMARG OCR |
| 1134 | Safety of bowel cleansers when combined with bisacodyl stimulant laxative: feasibility study | CPDB IPDB DN LHN PCCF REF DAD NACRS OOB OHP SDS RPDB |

| # | Project Title | ICES Data |
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| 1135 | SAH in Ontario | DIN PCCF INST CPRO DAD HCD NACRS NRS ODB OHP CENSUS CONTACT RPDB QLS OTR ORGO |
| 1136 | Salbutamol and risk and progression of parkinsonism | NACRS OHP SDS OCCC CONTACT RPDB |
| 1137 | Same Day Discharge after Percutaneous Coronary Intervention in Ontario: Temporal trends in utilization and clinical outcomes | DIN LHIN PCCF REF INST AVGPRICE STDPRIC E CCRS DAD HCD NACRS NRS ODB OHP OMHRS SDS HYPER ODD CENSUS RPDB ADP CAPE GAPP OHCAS OCCI CHF COPD CCN |
| 1138 | Scale, specialization, learning-by-doing and merger outcomes in Ontario hospitals | PCCF REF INST DAD NACRS SDS CENSUS POP RPDB MS OCCI ORGO |
| 1139 | Schizophrenia and Correctional Involvement - A Population-based Study | IPDB LHIN PCCF INST AVGPRICE ESTSOB CCRS DAD HCD NACRS NRS ODB OHP OMHRS SDS RPDB ADP CAPE OCCI ONMARG geisq MCSOS |
| 1140 | Schizophrenia Understood in the Perinatal period: Psychiatric Outcomes and Reproductive Trajectories (SUPPORT) - Part 3: Child Health | IPDB DIN LHIN PCCF AVGPRICE ESTSOB CCRS DAD NACRS NRS ODB OHP OMHRS RAHIC SDS ODD CONTACT RPDB geisq |
| 1141 | Screening and Vaccination by Family Physicians for Hepatitis B in Immigrants to Ontario | LHIN PCCF INST CCRS DAD HCD NACRS NRS ODB OHP SDS CENSUS RPDB ONMARG gepath HBV Prevalence by county |

| # | Project Title | ICES Data |
|------|---|---|
| 1142 | Screening outcomes and cost-effectiveness of personalized breast cancer screening among women within an organized screening program | IPDB DN LHM PCCF REF INST AVGPRIE ESTSOB CCRS DAD HCD NACRS NRS OOB OHP OMHRS SDS CENSUS RPDB ADP CAPE GAPP OCCI OHGAS ALR NDPP OCR getchemcost getradiatcost Average: Risk Cohort Cost Analysis, Aug 9 2019 |
| 1143 | Seasonal Variation in Stroke in Ontario | LHM PCCF DAD NACRS OOB OHP HYPER ODD CENSUS RPDB |
| 1144 | Second and third-line erlotinib use in non-small cell lung cancer: real world outcomes and practice patterns over time | DN LHM CCRS DAD OOB OHP OMHRS CHF COPD ODD RPDB ETHNIC DEMENTIA NDPP OCR NACRS |
| 1145 | Secular trends in the annual incidence and surgical treatment of pediatric urolithiasis in Ontario | AVGPRIE ESTSOB CCRS DAD HCD NACRS NRS OOB OHP OMHRS SDS CENSUS CONTRACT RPDB ADP CAPE GAPP NPHS OCCI ONMARG CCHS ofcbs |
| 1146 | Sedatives newly prescribed following ICU admission among sedative-naïve elderly patients | DN PCCF REF CCRS DAD HCD NACRS NRS OOB OHP OMHRS SDS RPDB NMS |
| 1147 | Self-reported oral health, diabetes outcomes and health care utilization in a cohort of diabetics in Ontario | DAD NACRS OOB OHP ODD RPDB CCHS |
| 1148 | Severe hyponatremia at TOH | CCRS DAD NACRS OOB OHP SDS CENSUS CONTRACT RPDB OCR HYPONATREMIA@TOH |
| 1149 | Severe nutritional complications after bariatric surgery | PCCF DAD NACRS OHP SDS RPDB OBSP OCR REF |

| # | Project Title | ICES Data |
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| 1150 | Severe RSV-related illness among Ontario children: comprehensively identifying high-risk children and evaluate targeted interventions | INST DAD NACRS OHP SDS CHF HYPER ODD OMD CENSUS RPDB ONMARG OCR |
| 1151 | Sex and gender-based differences in the outcomes of Ontario adults admitted to inpatient rehabilitation after stroke between 2012 and 2017 | IFDB PCCF REF INST DAD NACRS NRS OHP CENSUS RPDB ONMARG |
| 1152 | Sex differences in health care utilization prior to ALS case ascertainment | CPDB IFDB DN LHN PCCF REF INST CCRS DAD HCD NACRS ODB OHP RAHC SDS CONTACT RPDB ADP ORGO |
| 1153 | Sex-related differences in outcomes with anticoagulant use | AVGPRCE ESTSDB CCRS HCD NRS OMRS ADP CAPE CAPP OCCI OHCAS OLIS |
| 1154 | SGLT2 INHIBITORS VS OTHER HYPOGLYCEMICS IN ELDERLY DM2 PATIENTS | OMRS SDS HYPER MOMBABY ODD CONTACT |
| 1155 | Short- and Long-Term Outcomes of SLEB vs CRR1 at a Tertiary Care Hospital | IFDB DIN LHN PCCF REF INST INST AVGPRCE ESTSDB CORR DAD NACRS ODB OHP OMRS SDS ASTHMA CHF COPD HV HYPER ODD ORAD CENSUS CONTACT POP RPDB CAPE OLIS ETHNIC CCHS OCR ORGO |
| 1156 | Short and Long-Term Outcomes of Transcatheter Aortic Valve Replacement in Canada | LHN CCRS DAD NACRS ODB OHP CHF HYPER CENSUS RPDB ORGO DN DEMENTIA CCN |
| 1157 | Short-term and long-term outcomes of pituitary tumour surgery | CPDB IFDB DN LHN PCCF INST CCRS DAD HCD NACRS ODB OHP SDS ODD OMD CENSUS RPDB ORGO |

| # | Project Title | ICES Data |
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| 1158 | Should this Elderly Patient be Intubated in the Emergency Department? Development and Validation of a Clinical Prediction Tool | PCCF INST CCRS DAD HCD HOBIC NACRS NRS ODB OHP ASTHMA CHF COPD HYPER ODD OMD ORAD CENSUS CONTACT RPDB |
| 1159 | Shoulder Arthroplasty Survival | INST AVGPRICE CCRS DAD HCD NACRS NRS ODB OHP OMHRS SDS CONTACT POP RPDB ADP CAPE GAPP OCCI OHCAS |
| 1160 | SHSC health care contacts preceding suicide | CPDB RPDB LHN PCCF REF INST DAD NACRS OHP OMHRS SDS CENSUS RPDB CAPE ORGO |
| 1161 | Sickle cell disease in Ontario - Part 2 | PCCF DAD NACRS OHP RPDB NSO |
| 1162 | Sickle cell disease in Ontario - Update | PCCF REF AVGPRICE ESTSDB CORR RAICA RAIHC OMD ADP CAPE GAPP OCCI OHCAS |
| 1163 | Simultaneous RESEction of Colorectal Cancer with Synchronous Liver Metastases; (RESECT), A Feasibility Study - Population-based Analysis | CRH-DAD CRH-NACRS ODB OHP OCR NDF P |
| 1164 | Skin biopsy patterns of health care practitioners in Ontario (SkBPO) | CPDB RPDB DIN LHN PCCF REF INST AVGPRICE ESTSDB CCRS DAD HCD NACRS NRS ODB OHP OMHRS SDS CENSUS CONTACT POP RPDB ADP CAPE GAPP OCCI OHCAS ONMARG OCR ORGO |
| 1165 | Sleep deprivation during labour and risk of psychiatric hospitalization in the first three months after delivery | DAD NACRS OHP OMHRS CHF HYPER MOMBABY ODD OMD CONTACT RPDB BORN |

| # | Project Title | ICES Data |
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| 1166 | Social Assistance and High Cost Healthcare Users in Ontario | #PDB DN PCCF AVGP/ICE CCRS DAD HCD NACRS NRS ODB OHP OMHRS SDS ASTHMA CHF COPD HYPER ODD OMD CONTACT RPDB ADP CAPE GAPP OCC1 OHCAS MCSS PCPOP CIC CAPE |
| 1167 | Social determinants of health in uterine cancer patients in Ontario: association with disease presentation and outcome | CPDB #PDB DN LHN PCCF REF INST AVGP/ICE STDP/ICE E DAD HCD NACRS ODB OHP SDS ASTHMA CHF COPD ODD OMD CENSUS CONTACT RPDB ADP CAPE ONMARG CIC HCD |
| 1168 | Sociodemographic Determinants and Health Care Utilization in Ontario Shores Hospital Patient Population | CPDB #PDB DN LHN PCCF INST AVGP/ICE ESTSOB CCRS DAD HCD NACRS NRS ODB OHP OMHRS RAHC SDS ASTHMA CHF COPD HYPER ODD OMD CONTACT RPDB ADP CAPE GAPP OCC1 OHCAS OCR |
| 1169 | Sociodemographics, Chronic Disease Prevalence, and Multimorbidity in Trillium Health Partners' Catchment Area | #PDB DAD NACRS OHP RPDB |
| 1170 | Socioeconomic and geographic variations in violence-related deaths in Ontario: A population-based study | CIC |
| 1171 | Socioeconomic status and cancer surgery utilization | LHN PCCF REF INST DAD CENSUS POP RPDB |
| 1172 | Spatial accessibility of primary care and other health services for PLWD | CPDB #PDB LHN PCCF REF INST DAD NACRS ODB OHP RAHC CENSUS RPDB CAPE PCPOP OMHRS SDS ONMARG macro_reg dba_CHC MAPSON Role_Logistics/epk |
| 1173 | Spatial analysis of mortality trends in Ontario's Local Health Integration Network (LHIN) sub-regions, 1992-2014 | LHN PCCF REF CENSUS CONTACT POP RPDB ONMARG ORGO CONTACT |

| # | Project Title | ICES Data |
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| 1174 | Spatial clustering of patents within primary care settings and its relationship to differences in the quality of primary care across Ontario | CPDB #PDB DN REF AVGPRICE DAD NACRS ODB OHP SDS ASTHMA COPD HYPER ODD ORAD CENSUS POP RPDB CAPE CCHS OCR PHYSNET GDML PCCF CIC ETHNIC OBSP ORGO |
| 1175 | Spatial inaccessibility of greenness and allergic respiratory diseases in children | #PDB PCCF REF DAD NACRS OHP ASTHMA A MOMBABY CONTACT RPDB BORN CCHS CIC eq NDVI,PM25,NO2,O3,travel_time_estimates_composition_2009-2016 |
| 1176 | Spatiotemporal trends of incidence and prevalence of Parkinson's disease and the survival after diagnosis | NPHS CCHS |
| 1177 | Spinal Fusion in Ontario: A population-based perspective | #PDB LIN PCCF REF INST AVGPRICE CCRS DAD HCD NACRS NRS ODB OHP OMHRS SDS RPDB ADP CAPE GAPP ONCAS OCCI |
| 1178 | Spinal Imaging Utilization: Trends in Ontario, 2001-2017 | CCHS |
| 1179 | Spirolactone Use and Incident Atrial Fibrillation | #PDB DN PCCF REF CORR DAD NACRS ODB OHP SDS CONTACT RPDB OLS |
| 1180 | SSRI and SNRI drugs and respiratory health outcomes among older adults with COPD | #PDB DN PCCF REF DAD HCD NACRS ODB OHP OMHRS SDS CHF COPD HYPER ODD OMD CONTACT RPDB |
| 1181 | St. Michael's Hospital Acute Kidney Injury Registry | #PDB DN LIN PCCF REF CORR DAD NACRS ODB OHP SDS RPDB GDML AKI Registry |

| # | Project Title | ICES Data |
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| 1182 | Sage at diagnosis and access to cancer care in men with prostate cancer in Northeastern Ontario | CPDB #PDB DIN PCCF REF DAD NACRS ODB OHP OMHRS SDS ASTHM A CHF COPD HIV HYPER MOMBABY OCCC ODD OMD ORAD CENSUS CONTACT RPDB ORGD CHF COPD ODD |
| 1183 | Stakeholder Perceptions: Focus groups and ideation sessions regarding access and use of health and health-related data | Qualitative information collected in the context of stakeholder consultations with the public and Canadian researchers |
| 1184 | State of Glomerulonephritis in Ontario using OLIS | CPDB #PDB DIN LHN PCCF REF CCRS DAD HCD HOBIC NACRS NRS ODB OHP OMHRS RACIA RAHC SDS CENSUS CONTACT RPDB CAPE ONMARG |
| 1185 | Statistical Methods for Missing Data | DAD NACRS RPDB ORGD EFFECT EFFECT2 |
| 1186 | Simulant Use in Ontario | CPDB #PDB DIN LHN PCCF REF DAD NACRS ODB OHP OMHRS SDS CENSUS POP RPDB NMS Statistics Canada - CANSIM |
| 1187 | Stop Smoking for Ontario Patients Foundational Linkage | CPDB LHN PCCF INST DAD NACRS ODB OHP OMHRS SDS ASTHM CHF COPD HYPER OMD CENSUS CONTACT RPDB OCR ORGD ODD CCHS Smoking Treatment for Ontario Patients (STOP) database |
| 1188 | Stroke in Young Adults in Ontario: Risk Factors, Stroke Types, Care Access, Management, Complications and Outcomes | PCCF REF DAD NACRS ODB OHP CENSUS RPDB RCSN ETHNIC HYPER ODD |
| 1189 | Stroke Report Cards FY2017/18 | DIN LHN PCCF REF INST CCRS DAD HCD NACRS NRS ODB OHP OMHRS SDS CENSUS POP RPDB OHCAS Hospital Resource Survey for Stroke Services - Acute, Rehabilitation |

| # | Project Title | ICES Data |
|------|---|---|
| 1190 | Stroke risk-adjustment index | IPDB PCCF REF INST CCRS DAD HCD NACRS NRS ODB OHP SDS CENSUS RPDB OSR |
| 1191 | Stroke-related Risk and Incidence of Cardiovascular Complications in Ontario | IPDB LHN PCCF REF INST DAD NACRS ODB OHP SDS HV CONTACT RPDB ONMARG CIC DEMENTIA ASTHMA HIV OCC ORAD CAPE PCPOP |
| 1192 | Suicidal Behaviour and Health Care Service Utilization Prior to Death in Waterloo Region | IPDB LHN PCCF REF INST DAD NACRS ODB OHP OMRS SDS CENSUS CONTACT POP RPDB ONMARG ORGD gelsag CHC gelsag CHC |
| 1193 | Suicide and atopic dermatitis | DAD NACRS ODB OHP SDS MCMBABY RPDB ORGD |
| 1194 | Summarizing Medical Text for Physicians using Natural Language Processing | EMERALD |
| 1195 | SUPPORT III: Social outcomes, preventive care, injury and ambulatory sensitive care in infants and children of women with schizophrenia | IPDB DIN DAD NACRS ODB OHP OMRS ASTHM A HIV HYPER MCMBABY OCC ODD OMD RPDB ORGD SUPPORT Cohort gelsag |
| 1196 | Supporting complex cancer patients with multimorbidity navigate efficiently between health care and cancer care systems | DAD NACRS OHP SDS ODD RPDB OCR NMS DIN |
| 1197 | Surgery, Anesthesia, and Development of Dementia: A Population-based Retrospective Cohort Study | IPDB DIN PCCF REF INST DAD NACRS ODB OHP OMRS SDS CHF COPD HYPER OCC ODD OMD ORAD CONTACT POP RPDB CCRS HCD NRS RAHIC ASTHMA ONMARG |

| # | Project Title | ICES Data |
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| 1198 | Surgical Ablation of Atrial Fibrillation Evaluation through ICES (SAFE@ICES) | #PDB DN PCCF REF DAD NACRS ODB OHP SDS CONTACT RPDB CCN |
| 1199 | Surgical Closure of Pressure Ulcers in SCI Adults: Case Identification, Health Care Utilization, Costs and Risk Factors for Surgical Complications | #PDB INST AVGP/ICE STDP/IC E DAD HCD NACRS NRS OHP RPDB Pressure Ulcer Reconstruction in Spinal Cord Injured Patients PU Reconstruction in SCI Patients |
| 1200 | Surgical Outcomes of People Living with HIV/AIDS in Ontario (SOPHA) Study | #PDB CPDB DN CENSUS POP CAPE |
| 1201 | Surgical Treatment of Thoracoabdominal Aortic Aneurysms: Open vs Endovascular Techniques | #PDB LHN PCCF REF INST DAD NACRS OHP SDS ASTHMA CHF COPD HIV HYPER ODD CONTACT RPDB ORGO |
| 1202 | Surveillance Colonoscopies in Ulcerative Colitis: Does it make a difference? | DAD SDS OHP RPDB OCR |
| 1203 | Survival and Cardiac Recovery in Pediatric cardiomyopathy (SCRIPT study) | DAD NACRS ODB OHP SDS ASTHMA CHF COPD HYPER MCM/BABY ODD RPDB ORGO OCR |
| 1204 | Survival, relapse, and health services utilization (HSU) rates among childhood cancer patients based on mother's age at the time of diagnosis, Ontario 1995-2015 | DAD NACRS OHP MCM/BABY RPDB POGONIS |
| 1205 | Survival, treatment patterns and costs associated with advanced high-fatality cancers | CPDB #PDB DN LHN PCCF INST CCRS DAD HCD NACRS NRS ODB OHP OMBS RAICA RAHC SDS CENSUS RPDB ONMARG ALR CIC NDPP OCR ESAS |
| 1206 | Survival, treatment patterns, and resource utilization in gastric and esophageal cancer resections in Ontario: A population-based analysis | DN ODB CIC NDPP Wholesale Cancer Drug Costs |
| 1207 | Survival, Treatment Patterns, and Resource Utilization in Gastric Cancer Resections in Ontario: A Population-based Analysis | LHN INST AVGP/ICE STDP/IC E CCRS DAD HCD NACRS NRS ODB OHP SDS CENSUS RPDB ONMARG ALR NDPP OCR gpp/ff CPDB #PDB PCCF DN ODB NDPP Wholesale Cancer Drug Costs |

| # | Project Title | ICES Data |
|------|--|---|
| 1208 | Survival, treatment patterns, and resource utilization in gastroesophageal cancer resections in Ontario: A population-based analysis | LHN INST AVGPRCE STDPRIE E CCRS DAD HCD NACRS NRS ODB OHP SDS CENSUS RPDB ONMARG ALR NDPP OCR CPDB IPDB PCCF DIN ODB NDPP gpath Wholesale Cancer Drug Costs |
| 1209 | Symptom Burden Among Patients with Lung Cancer: Analysis of Province-Wide Patient Reported Outcomes | DIN DAD NACRS ODB OHP OMHRS ASTHM A CHF COPD HIV HYPER MOMBABY ODD ODD OMD ORAD RPDB CIC OCR ORGO %getradiationcost %getchemocost |
| 1210 | Synthetic oral cannabinoid use among older adults with COPD | CPDB IPDB DIN LHN PCCF REF INST AVGPRCE CCRS CORR COPD DAD HCD HOBIC NACRS NRS ODB OHP OMHRS RAICA RAIHC SDS ASTHMA CHF COPD HIV HYPER MOMBABY ODD OMD ORAD CENSUS CONTACT POP RPDB CAPE ONMARG ETHNIC |
| 1211 | Tailoring Birthweight and Infant Growth Curves to Canadians of Various Ethnic Backgrounds | ETHNIC |
| 1212 | Tailoring Physician Interventions to Reduce Impaired Driving | DAD OHP ODD CENSUS RPDB ONMARG ETHNIC CIC Ontario Ministry of Transportation Datasets |
| 1213 | Temozolomide and risk of congestive heart failure (feasibility study) | INST OHF COPD HYPER ODD RPDB OCR NMS |
| 1214 | Temporal trends in centralization of rectal cancer care | IPDB LHN PCCF REF INST DAD NACRS OHP SDS RPDB OCR |
| 1215 | Temporal trends in chronic heart failure, acute myocardial infarction and pneumonia | PCCF DAD NACRS ODB OHP SDS MOMBABY CENSUS RPDB ADP CIC ORGO |
| 1216 | Testosterone data from OLS | OLS |

| # | Project Title | ICES Data |
|------|---|--|
| 1217 | Testosterone therapy and risk of injury to patients | DAD NACRS OHP OMHRS CONTACT RPDB CCHS ORGO |
| 1218 | The Advancement and Democratization of Medical Research in Canada through the Development and Validation of Randomized Registry Trials | Randomized registry trial randomization study phase 1 |
| 1219 | The Aging Face of Spinal Trauma: An Ontario Population Based Study to Evaluate the Epidemiology and Impact of Age on Traumatic Spinal Cord Injury | DIN LHN PCCF INST AVGPR/E SIDPR/IC E CCRS DAD NACRS NRS ODB OHP SDS CENSUS RPDB HCD OMHRS SDS ADP CAPE GAPP OHCAS OCCI POP |
| 1220 | The association between Cannabis use and Cardiovascular Events | CPDB IFDB DIN LHN PCCF INST CCRS DAD HCD NACRS NRS ODB OHP OMHRS RAICA RAHC SDS CENSUS RPDB OMMARG ALR CIC NDPP OCR ESAS |
| 1221 | The association between childhood food insecurity and chronic health conditions: a population based cohort study | CPDB IFDB LHN DAD NACRS OHP OMHRS SDS ASTHMA CHF COPD HYPER MOMBABY OCCO ODD ORAD RPDB CCHS CORR OLIS CIC |
| 1222 | The association between DOACs, versus thromboembolism, thrombosis and bleeding in patients with moderate to severe chronic kidney disease | DIN PCCF REF DAD NACRS ODB OHP CHF HYPER ODD OMD CONTACT RPDB OLIS OCR ORGO |
| 1223 | The Association between Home Care Rehabilitation Therapy Services and Health Utilization Outcomes Among Individuals with Multimorbidity | IFDB LHN PCCF REF INST CCRS DAD HCD NACRS NRS ODB OHP RAHC SDS ASTHMA CHF COPD HYPER ODD OMD ORAD CENSUS CONTACT POP RPDB OCR |
| 1224 | The Association Between LDL-cholesterol Levels and Statin Intensity with Outcomes after Percutaneous Coronary Intervention | IFDB LHN DAD NACRS ODB OHP ODD RPDB ADP OLIS |

| # | Project Title | ICES Data |
|------|--|--|
| 1225 | The Association Between Oral Health and Cardiovascular Disease: A New Analytical Approach and Potential Explanation | CCRS HCD NRS OMHRS SDS CHF |
| 1226 | The Association Between Shift Work And The Risk Of Hypertension In Ontario Working Adults And The Potential Mediating Effect Of Sleep Duration | LHN PCCF REF DAD NACRS OHP HYPER ODD CENSUS CONTACT POP RPDB CCHS |
| 1227 | The Association between Socioeconomic Status and the Utilization of Vision Care Services among a Birth Cohort of Children in Ontario | CPDB PDB PCCF DAD NACRS ODB OHP MCMBABY CENSUS RPDB CAPE ONMARG ORGD CIC |
| 1228 | The Association between the Oncotype DCIS Score of the index DCIS lesion and Oncotype DX Recurrence Score of the Invasive Local Recurrence | FPDB DIN LHN PCCF REF INST CORR DAD NACRS ODB OHP HYPER ODD CONTACT RPDB OLIS CCR DCIS Pathology Data |
| 1229 | The association between the Super Bowl and cardiovascular events | PDB DIN PCCF REF INST DAD NACRS ODB OHP SDS CHF HYPER ODD CONTACT RPDB CCRS |
| 1230 | The Association Between Timing of Social Benefit Payment and Health Care Utilization | RPDB |
| 1231 | The association between vulnerability and avoidable mortality in Ontario | CPDB FPDB LHN PCCF DAD HCD NACRS OHP RAHC ASTHMA CHF COPD HIV HYPER OCC ODD OMD ORAD CENSUS CONTACT RPDB CAPE ONMARG ORGD POP ODS AVGPRICE ESTSOB CCRS NRS ODB OMHRS SDS ADP GAPP OCCI OHCAS |

Alcohol availability in Ontario - 2013-2017

| # | Project Title | ICES Data |
|------|---|--|
| 1232 | The association between vulnerability and substance use harms in Ontario | AVGPRCE ESTSOB CCRS DAD NACRS NRS ODB OHP OMHRS SDS CONTACT RPDB ADP GAPP OCCI OHCAS ONMARG CPDB DIN PCCF HCD RAIHC ASTHMA CHF COPD HIV HYPER ODD OMD CONTACT RPDB CAPE ALR |
| 1233 | The association of dialysis modality with mortality in patients with heart failure and ESKD | LHIN PCCF REF AVGPRCE ESTSOB DAD NACRS OHP SDS CENSUS CONTACT PCP RPDB ONMARG |
| 1234 | The Association of Platelet Counton Cancer Incidence and Survival | IPDB DIN LHIN REF CCRS DAD HCD NACRS NRS ODB OHP OMHRS RAIHC SDS ASTHM A CHF COPD HIV HYPER MOMBABY ODD OMD CONTACT RPDB CAPE OLIS NMS ORGO ALR NDPP OBSP OCR g6a0g ETHNIC CIC |
| 1235 | The association of sodium polystyrene sulfonate with adverse gastrointestinal outcomes | IPDB DIN PCCF REF CORR DAD NACRS ODB OHP SDS CONTACT RPDB GGAL OLIS |
| 1236 | The association of ST and non-ST elevation myocardial infarction with eGFR level and proteinuria | IPDB PCCF REF CORR DAD DAD NACRS OHP SDS CONTACT RPDB GGAL DIN ODB OMHRS |
| 1237 | The Availability of Hemoglobinopathy Carrier Results from Newborn Screening Ontario - a Geotargeted Education Campaign | ETHNIC |
| 1238 | The Benefits and Harms of Antibiotic Prophylaxis for Urinary Tract Infection | DIN CCRS DAD NACRS ODB OHP ODD RPDB OLIS |
| 1239 | The benefits of pneumococcal immunization programs for preventing invasive pneumococcal disease, acute otitis media, community-acquired pneumonia | ODD NACRS ODB OHP RPDB OLIS PHIS |

| # | Project Title | ICES Data |
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| 1240 | The burden of cancer and the role of engagement in HIV care in mitigating cancer risk in people living with HIV in Ontario | IPDB LHIN PCCF REF OHP HIV CENSUS RPDB CAPE ORGD CIC HIVOHTN OCR |
| 1241 | The burden of childhood respiratory diseases in Ontario, Canada | DNI LHIN PCCF REF DAD NACRS NRS ODB OHP OMRS SDS CHF COPD HYPER ODD RPDB DEMENTIA |
| 1242 | The CART Mile-Outcomes study: Relating Canada's unique mileprison regulations to health system outcomes, costs, and access to medical abortion | CPDB LHIN PCCF DAD NACRS ODB OHP RPDB MOMBABY POP ONMARG CIC |
| 1243 | The cost-effectiveness of early physical medicine & rehabilitation (PM&R) consultation for trauma patients in a Level 1 trauma centre in Canada | PCCF REF INST DAD NACRS ODB OHP SDS MOMBABY CENSUS CONTACT POP RPDB NRS RPDB PM&R Consultation of Trauma Patients in SHSC |
| 1244 | The diagnostic and prognostic value of the 50 g glucose challenge test in twin versus singleton gestations | DAD NACRS OHP HYPER MOMBABY ODD RPDB OUS |
| 1245 | The economic burden of potentially inappropriate prescribing in Ontario: a population-based study | CPDB IPDB DNI LHIN PCCF AVGP/RIE CCRS DAD HCD NACRS NRS ODB OHP OMRS SDS ASTHMA CHF COPD HYPER ODD ORAD RPDB ADP CAPE GAPP OHCAS OCCI |
| 1246 | The Effect of Anemia in Pregnancy on Maternal, Fetal and Neonatal Outcomes: A retrospective cohort study using administrative data in Ontario | IPDB PCCF REF INST DAD NACRS OHP MOMBABY CENSUS RPDB OUS BORN |
| 1247 | The Effect of Brachytherapy Patient Volume in Radiation Oncology Facilities on Treatment Outcome in Locally-Advanced Cervical Cancer in Ontario | PCCF AVGP/RIE ESTSOB CCRS DAD HCD NACRS OHP OMRS SDS CENSUS RPDB CAPE OCCI ONMARG CONTACT |

| # | Project Title | ICES Data |
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| 1248 | The effect of locus of care upon adolescent and young adult cancer outcomes: An IMPACT cohort study | PCCF INST DAD HCD NACRS OHP SDS CENSUS POP RPDB ONMARG IMPACT POGONIS ALR NDPP |
| 1249 | The effect of patient-related factors on healthcare resource utilization and cost of care in patients with myelodysplastic syndromes | CPDB FPDB DIN LHN PCCF REF INST AVGPRCE ESTSOB CCRS DAD HCD NACRS NRS ODB OHP OMHRS RAICA RAHC SDS CENSUS CONTACT RPDB ALR NDPP OCR OLIS Ontario subset of MDS-CAN registry |
| 1250 | The effect of RAAS withdrawal after hyperkalemia | FPDB DIN PCCF REF CORR DAD NACRS ODB OHP SDS CONTACT RPDB OLIS ORGO |
| 1251 | The effect of the Syrian Refugee Wave on mental health bed capacity: A system level analysis of population based linked administrative databases | LHN PCCF REF INST DAD NACRS OHP OMHRS CENSUS CONTACT POP RPDB CIC |
| 1252 | The effect of variable antibiotic durations on patient outcomes | FPDB DIN LHN CCRS DAD HCD NACRS ODB OHP SDS ASTHM A CHF COPD HV HYPER MCMBABY OCCC ODD OMD ORAD CENSUS RPDB p99sig |
| 1253 | The epidemiology of cerebral palsy in Canada: Describing the burden and assessing effects of antenatal exposures | LHN PCCF REF DAD NACRS ODB OHP HYPER MCMBABY ODD CENSUS CONTACT POP RPDB ONMARG |
| 1254 | The epidemiology of mental health conditions in patients with chronic kidney disease: a population-based study | CPDB FPDB DIN LHN PCCF REF INST CORR DAD NACRS ODB OHP OMHRS HYPER CONTACT RPDB OLIS ONMARG |
| 1255 | The Evolution of Advanced Non-Small Cell Lung Cancer (NSCLC) Treatment over 20 Years and the Implications on Financial Toxicity | DAD ODB OH P OHCAS:HCID OCR NDPP |

| # | Project Title | ICES Data |
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| 1256 | The FLUID Trial: A Protocol for a Hospital – Wide Cluster Cross-Over Pragmatic Comparative Effectiveness Randomized Pilot Trial | DIN LHIN PCCF REF DAD HCD NACRS ODB OHP OMHS RAHC ASTHM ACHF COPD ODD ORAD CENSUS CONTACT RPDB HCDMOH |
| 1257 | The frequency of routine laboratory testing and patient outcomes among maintenance hemodialysis patients | RPDB PCCF CCRS CORR DAD NACRS NRS ODB OHP SDS CONTACT RPDB ORRS OMHS Dialysis program laboratory testing frequency |
| 1258 | The health care transitions of the individuals with severe/uncontrolled asthma: from primary to specialist care | CPDB RPDB DIN LHIN PCCF REF INST AVGPRE ESTSOB CCRS DAD HCD NACRS NRS ODB OHP OMHS SDS ASTHMA CHF COPD HYPER ODD OMD CENSUS CONTACT POP RPDB ADP CAPE ERCLAIM ONMARG ORGD |
| 1259 | The Healthy Immigrant Effect in Mental Health | LHIN DAD NACRS ODB OHP OMHS ASTHMA CHF COPD HIV HYPER OCC ODD OMD ORAD CENSUS RPDB ONMARG OC ETHNIC OCR CCHS CHC |
| 1260 | The Impact of a cervical cancer screening policy change in Ontario, Canada | CPDB RPDB LHIN PCCF DAD OHP SDS CENSUS RPDB ONMARG CIC OCR PCPOP getacq |
| 1261 | The Impact of a Physician Incentive Program on Continuity of Care and Health Outcomes in Inflammatory Bowel Disease and Cirrhotic Patients | PD B LHI N NS T AVGPRE CCRS DAD HCD NACRS NRS ODB OHP OMHS SDS OCC CONTACT RPDB ADP CAPE GAPP OHCAS OCCI CFDR ESTSOB |

| # | Project Title | ICES Data |
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| 1262 | The Impact of Anticoagulation Following Bioprosthetic Aortic Valve Replacement | IPDB DIN INST DAD NACRS ODB OHP SDS CHF COPD HYPER ODD CENSUS POP RPDB |
| 1263 | The Impact of Bariatric Surgery on Healthcare Utilization among the Elderly | IPDB DIN LHN PCCF REF INST DAD NACRS ODB OHP SDS POP RPDB ORGO HYPER ODD OCR |
| 1264 | The impact of competing risks on the predicted risk of stroke in patients with atrial fibrillation | DIN REF DAD NACRS ODB OHP SDS CHF COPD HYPER ODD RPDB OCR ORGO |
| 1265 | The impact of delays in door-to-imaging times on outcomes in Ontario patients with suspected acute stroke | PCCF DAD NACRS RPDB RCSN |
| 1266 | The Impact of Early vs Delayed Intervention for Acutely Symptomatic Renal Calculi | LHN INST DAD NACRS OHP SDS RPDB |
| 1267 | The Impact of Financial Incentives and Primary Care Model on Health Care Utilization for People with Schizophrenia and Bipolar Disorder | CPDB IPDB LHN PCCF ESTSOB DAD NACRS OHP OMHS CENSUS CONTACT POP CAPE REF ODD RPDB GAPP ONMARG CHC ARCHPAY |
| 1268 | The impact of home care services on hospital and health service utilization for a propensity score-matched cohort | CPDB IPDB DIN LHN PCCF REF CCRS DAD HCD HOBIC NACRS NRS ODB OHP OMHS RAICA RAIHC SDS CONTACT RPDB CAPE ONMARG |
| 1269 | The Impact of Imaging Surveillance Following Acute Aortic Dissection | DIN REF DAD ODB OHP SDS CHF COPD HYPER ODD RPDB DEMENTIA CCN |
| 1270 | The impact of immigration status and ethnicity on head and neck cancer incidence | DAD NACRS OHP OMHS CONTACT RPDB QIS getag |

| # | Project Title | ICES Data |
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| 1271 | The Impact of Multimorbidity on Risk of Dementia in Ontario (originally titled Multimorbidity and Dementia Incidence) | LHN PCCF INST AVGPRICE DAD NACRS OHP SDS ASTHM A CHF COPD CENSUS RPDB OC OCR CPDB IFDB CAPE ONMARG DN NACRS OMHRS CONTACT EMRPC DEMENTIA OCR |
| 1272 | The impact of Ontario's primary care reform on quality of care for congestive heart failure, diabetes mellitus and chronic kidney disease | LHN PCCF REF AVGPRICE ESTSOB DAD NACRS ODB OHP HIV CONTACT RPDB ERCLAM ONMARG OC HIVHTN |
| 1273 | The impact of opioid prescriptions after low-acuity urology surgery on long-term opioid use | PDB DN LHN PCCF REF INST DAD NACRS ODB OHP OMHRS SDS ODD CENSUS CONTACT POP RPDB NMS ORGO OCR |
| 1274 | The Impact of OxyContin De-Scheduling in Ontario | LHN DAD NACRS ODB OHP OMHRS CENSUS RPDB NMS |
| 1275 | The impact of pre-operative anemia on patients undergoing gynecologic surgery for heavy menstrual bleeding | DN PCCF REF CORR DAD NACRS ODB OHP COPD ODD CONTACT RPDB ONMARG |
| 1276 | The impact of private clinics on access to endoscopy in Ontario | PDB LHN PCCF REF INST DAD NACRS OHP SDS RPDB OCR CENSUS CONTACT POP POPCAN |
| 1277 | The impact of repository imaging services (RIS) based imaging on hepato-pancreato-biliary (HPB) cancer care | NDPP |
| 1278 | The impact of rurality and geography on healthcare service access for children with asthma/diabetes: A population level retrospective cohort study | CPDB PDB LHN PCCF INST DAD NACRS ODB OHP ASTHMA ODD POP RPDB ONMARG DN REF SDS CENSUS CONTACT |

| # | Project Title | ICES Data |
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| 1279 | The impact of surgeon attributes on outcomes following total joint arthroplasty | IPDB DRN LINN PCCF REF INST DAD NACRS NRS OHP SDS ASTHM ACHF COPD HYPER ORAD RPDB |
| 1280 | The Impact of Synchronous Malignancies on Survival in Patients with Early Stage Curable Non-Small-Cell Lung Cancer | CCRS DAD HCD NACRS NRS ODB OHP OMHRS SDS ADP CAPE MS ALR NDPP OCR %gettsdlincoast %getchemcoast Dataset has yet to be created by CCO |
| 1281 | The impact of the after-hours premium on primary care and emergency department utilization and costs in Ontario | ODB OMHRS ASTHMA CHF COPD HIV HYPER OCCC ODD OMD ORAD POP OCR |
| 1282 | The Impact of the After-Hours Premium Primary Care and Emergency Department Utilization and Costs in Ontario | CPDB IPDB PCCF DAD NACRS OHP SDS CENSUS CONTRACT RPDB CAPE ONMARG |
| 1283 | The impact of the change in eligibility criteria for multi-care kidney clinics | IPDB PCCF REF CORR DAD NACRS ODB OHP SDS CENSUS RPDB OLS |
| 1284 | The Impact of the Diabetes Management Incentive on Hospitalizations and Mortality Risk in Ontario | CPDB IPDB PCCF DAD NACRS OHP SDS ODD CENSUS RPDB CAPE ONMARG |
| 1285 | The impact of the model of long-term follow-up care on adherence to surveillance for late-effects in survivors of adolescent and young adult cancers | CPDB IPDB DAD NACRS OHP SDS RPDB ONMAR G POGONI S IMPACT OBSP gettag Physicians in Long-Term Follow-Up Clinics |
| 1286 | The Impact of the Ontario Fertility Program on Duplicate Fertility Consultations | CPDB IPDB OHP RPDB |

| # | Project Title | ICES Data |
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| 1287 | The impact of triple therapy in COPD on 'real world' health | CPDB #PDB DIN LHN PCCF INST CCRS DAD HCD NACRS ODB OHP OMHRS SDS ASTHM A CHF COPD HYPER ODD OMD ORAD CENSUS CONTACT POP RPDB CAPE ONMARG ORGD CIC OCR ADP OLIS CCHS getag |
| 1288 | The impact of triple therapy in COPD on 'real world' health | ADP OLIS CCHS getag |
| 1289 | The implications of household food insecurity for maternal and infant health | DAD NACRS OHP OMHRS SDS MOMBABY CENSUS RPDB CCHS ASTHM |
| 1290 | The incidence and predictors of hearing loss among childhood cancer survivors | #PDB REF DAD NACRS OHP OMHRS RPDB OCR ORGD POGONIS ADP Application for Funding Hearing Devices from Assistive Devices Program (ADP) |
| 1291 | The incidence and risk of syncope in patients with chronic kidney disease | #PDB DIN PCCF REF CORR DAD NACRS ODB OHP SDS CONTACT RPDB GDML |
| 1292 | The incidence, outcomes and health services utilization of inflammatory bowel disease amongst South Asians in Ontario | PCCF DAD NACRS OHP SDS MOMBABY OCCC CENSUS CONTACT RPDB ERCLAIM ETHNIC CIC |
| 1293 | The Indigenous Neonatal Abstinence Syndrome Project (NAS) coming together to understand prenatal opioid exposure and neonatal abstinence syndrome | PCCF DAD NACRS ODB OHP OMHRS SDS ASTHM CHF COPD HY HYPER MOMBABY OCCC ODD OMD ORAD CENSUS CONTACT POP RPDB OHCAS OTR NMS INST |
| 1294 | The influence of air pollution on potentially fatal cardiac arrhythmias in Ontario, Canada | DIN PCCF REF DAD NACRS ODB OHP RPDB ORGD ED ONMARG NAPS |

| # | Project Title | ICES Data |
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| 1295 | The influence of home care and primary care clinical collaboration on urgent and emergent health service use among home care clients | CPDB #PDB DN LHN PCCF REF CCRS DAD HCD NACRS NRS ODB OHP OMHRS RAICA RAHC CONTACT CAPE |
| 1296 | The influence of LTC resident communication abilities on antibiotic use | LHN PCCF REF CPRD DAD NACRS OHP OMHRS SDS ASTHMA CHF COPD HYPER OCOC ODD OMD ORAD CENSUS CONTACT POP RPDB ONMARG OCR %getdiag |
| 1297 | The influence of Nursing Home Resident Characteristics and Physician Models of Care on Hospital Transfers in Ontario | CPDB #PDB DN LHN PCCF REF CCRS DAD NACRS ODB OHP SDS CONTACT RPDB CAPE |
| 1298 | The influence of post-acute primary care and home care services on clinical outcomes among older adults | CPDB #PDB DN LHN PCCF REF CCRS DAD HCD HOBIC NACRS NRS ODB OHP OMHRS RAICA RAHC SDS CONTACT RPDB CAPE ONMARG |
| 1299 | The local retail food environment and health in southern Ontario | PCCF DAD NACRS OHP SDS CHF COPD HYPER ODD OMD CENSUS RPDB ONMARG OC ETHNIC ORGD Walkability food |
| 1300 | The longitudinal effect of gastric bypass on multiple health outcomes: a Canadian cohort | PCCF REF DAD NACRS OHP SDS CHF COPD HYPER MOMABY OCOC ODD OMD CENSUS CONTACT RPDB OUS EMERALD BRTRC CCHS OCR CPDB HCD NRS ODB OMHRS ASTHMA ORAD ORGD ONMARG |

| # | Project Title | ICES Data |
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| 1301 | The management of multivessel coronary artery disease in diabetics: an Ontario population based study | DIN LHN PCCF DAD NACRS ODB OHP SDS CHF COPD HYPER ODD CENSUS RPDB CCN |
| 1302 | The mortality and cardiovascular morbidity of patients with psoriatic disease in Ontario | CPDB #PDB DIN LHN PCCF REF DAD NACRS ODB OHP SDS ASTHM A CHF COPD HYPER ODD ORAD CENSUS POP RPDB ONMARG ETHNIC ORGD |
| 1303 | The Ontario COPD Population Health Network (OPHN): COPD Hospital Re-admissions (sub-project) | ONMARG |
| 1304 | The Ontario Holler/Echo Database Project 1: Novel Cardiac Risk Factors and Stroke Risk Prediction | DIN LHN PCCF REF CCRS DAD NACRS ODB OHP CENSUS RPDB ORGD Cardiac Outpatient Database |
| 1305 | The Ontario Integrated Supervised Injection Services: examining uptake and impacts in different community settings and models of care | #PDB DIN PCCF REF DAD NACRS ODB OHP OMHRS HIV CENSUS CONTACT RPDB CAPE NIS ORGD Ontario Integrated Supervised Injection Services (OISIS) |
| 1306 | The opioid epidemic and prescribing practices: what is the role of physicians? Evidence from Ontario, Canada | CPDB #PDB LHN PCCF REF INST CENSUS CONTACT RPDB ORGD NIS |
| 1307 | The Ottawa Hospital Clinical Prediction Rule to Identify Patients with Advanced Liver Disease at High Risk of Early Re-Hospitalizations | #PDB DAD NACRS OHP ORGD TCH Liver Disease |
| 1308 | The patterns and characteristics of integrated care for patients with COPD in the SELHIN | CPDB #PDB DIN LHN PCCF REF INST DAD HCD NACRS ODB OHP RAHC SDS ASTHM A CHF COPD HYPER CENSUS CONTACT POP RPDB CAPE ONMARG CCRS CHF PHOS PCPOP |
| 1309 | The Physician Pregnancy Project: A Population-Based Study of Pregnancy Outcomes and Parental Leave Practices of Ontario's Female Physicians | CPDB #PDB DIN LHN PCCF CORR DAD ODB OHP OMHRS SDS HIV CONTACT RPDB CCHS CC OCR PHOL lab: positive TB cases 1998-2013 ACG College of Physicians and Surgeons of Ontario Physician Information |

| # | Project Title | ICES Data |
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| 1310 | The Physician Pregnancy Project: A Population-Based Study of Pregnancy Outcomes and Parental Leave Practices of Ontario's Female Physicians | CC |
| 1311 | The Physician Pregnancy Project: A Population-Based Study of Pregnancy Outcomes and Parental Leave Practices of Ontario's Female Physicians | CAPE OLIS BORN OCR |
| 1312 | The prevalence and impact of intensive diabetes treatment in older adults | CPDB IPDB LIN INST ESTSOB CCRS CPRO DAD HCD HOBIC NACRS NRS OOB OHP OMHRS RAICA RAHC CENSUS CONTACT POP RPDB ADP ERCLAM HCDMOH LOC ONMARG |
| 1313 | The prevalence of diabetes (Type 1 and Type 2) among school-aged children (5-14 years) in the region of Peel | DAD NACRS OHP ODD CENSUS RPDB |
| 1314 | The Prevention of Group B Streptococcus (GBS) Disease in Infants | DAD NACRS MOMBABY RPDB OLIS BORN |
| 1315 | The problem with pertussis: Finding uncaptured pertussis cases in the EMRPC to improve estimates of burden and vaccine effectiveness | OHP EMERALD DAD NACRS RPDB PHO lab and iPHIS data |
| 1316 | The prognostic value of 75 g oral glucose tolerance test results in twin versus singleton gestations | DAD NACRS OHP HYPER MOMBABY ODD RPDB OLIS ETHNIC |
| 1317 | The rate of unnecessary interventions for the management of knee osteoarthritis: Are physicians following clinical practice guidelines? | CPDB IPDB CAPE ONMARG |
| 1318 | The Real World Safety and Effectiveness of FOLFIRINOX and Gemtabinemab-Paclitaxel in Advanced Pancreatic Cancer | CHDAD CHRNACRS CHISDS ODD OHP OHAS / HCD CCRS NRS RPDB OCR NDFP |
| 1319 | THE RELATIONSHIP BETWEEN CAREGIVING AND FORMAL HEALTHCARE COSTS | CCRS DAD HCD NACRS NRS OOB OHP OMHRS RPDB CHS CPDB AVGPRICE ASTHMA CHF COPD OCCC ODD OMD ORAD ADP CAPE GAPP OCCI OHAS DEMENTIA RAHC ADP CAPE GAPP OCCI OHAS DEMENTIA |

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| 1320 | The Relationship between Childhood Adverse Experiences and Type II Diabetes Mellitus | IPDB DIN LHN PCCF AVGP/ICE EST/CE CCRS DAD NACRS NRS ODB OHP OMBRS RAHC SDS ODD CONTACT RPDB |
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| # | Project Title | ICES Data |
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| 1321 | The relationship between early cardiac rehabilitation and long-term outcomes in a post-CABG population – a propensity matched observational study | ONMARG ETHNIC |
| 1322 | The relationship between early cardiac rehabilitation and long-term outcomes in a post-CABG population – an observational study | ONMARG |
| 1323 | The relationship between life satisfaction and ambulatory care sensitive conditions | IPDB CCRS DAD HCD NACRS NRS ODS OHP OMHRS SDS CHF COPD HYPER ODD OMD RPDB ADP CAPE LOC OHCAS PHO Lyme Disease Data |
| 1324 | The Relationship between Sleep Apnea, Opioid Use and Adverse Long-Term Outcomes: An Explanatory Population-Based Study | CPDB IPDB DIN PCCF REF INST CORR DAD NACRS ODS OHP OMHRS RAHC SDS ASTHM A CHF COPD HYPER ODD OMD CENSUS CONTACT RPDB ADP ONMARG NMS OCCC ORAD OCR HCD ONMARG |
| 1325 | The rising burden of lung cancer: An inter-provincial health economic analysis | CCRS DAD HCD NACRS NRS OHP OMHRS SDS RPDB ADP CAPE HCDIICH ALR OCR ORGD %getchemocost %getradiationcost getdiag |
| 1326 | The risk of arterial disease in patients with hemophilia and von Willebrand Disease | DIN LHIN PCCF REF DAD NACRS ODS OHP HIV ODD OMD CENSUS RPDB |
| 1327 | The risk of death following first hospitalization: a population-based study | CPDB IPDB DIN LHIN PCCF REF INST DAD HCD NACRS ODS OHP OMHRS SDS CENSUS POP RPDB OCR ORGD DIN RAICA RAHC CCRS |
| 1328 | The risk of heart failure with pertuzumab in women with advanced breast cancer | IPDB DIN PCCF REF AVGPRICE ESTS DAD NACRS ODS OHP SDS CHF COPD HYPER ODD OMD CENSUS CONTACT RPDB OLS ALR NDPP OCR ORGD |

| # | Project Title | ICES Data |
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| 1329 | The risk of hyperkalemia and acute kidney injury among elderly patients prescribed non-steroidal anti-inflammatory drugs | CPDB #PDB DN LHN PCCF REF AVG/PNE CCRS CORR DAD HCD NACRS NRS OBS OHP OMHRS SDS CENSUS CONTACT RPDB ADP CAPE GAPP OCCI ORGD GDM OLIS NDPP |
| 1330 | The risk of serious infections and fractures in patients with myasthenia gravis in Ontario | #PDB DAD NACRS SDS ASTHMA CHF COPD HYPER OCC ODD ORAD OBS OHP OCR |
| 1331 | THE RISK OF VENOUS THROMBOEMBOLISM IN POST-DISCHARGED PATIENTS WITH IBD | LHN PCCF DAD NACRS OBS OHP ASTHMA CHF COPD HYPER ODD OMD CONTACT RPDB CCHS OCR DAD |
| 1332 | The role of body weight in explaining the relationship between dietary patterns and incident type 2 diabetes | CHF OMD ORGD |
| 1333 | The Role of Myocardial Viability Testing in the Management of Patients with Ischemic Heart Failure | REF INST DAD OHP SDS RPDB CCN HYPER ODD ETHNIC |
| 1334 | The safety and efficacy of aortic root enlargement at the time of surgical aortic valve replacement (ARE during AVR) | DN LHN PCCF REF INST AVG/PNE CCRS CPRO DAD HCD NACRS NRS OBS OHP OMHRS SDS CENSUS POP RPDB ADP CAPE GAPP OCCI OHCAS |
| 1335 | The Safety and Efficacy of Transcatheter Valve-in-Valve versus Redo Surgical Aortic Valve Replacement for Failed Biological Prostheses | DAD OHP RPDB CCN |
| 1336 | The safety of emergency physician cardioversion: Combining results from four studies on atrial fibrillation | #PDB DN PCCF REF INST DAD NACRS OBS OHP CHF COPD HYPER ODD OMD RPDB CAPE data_after |
| 1337 | The Significance of Microinvasion in Women with DCIS treated with Breast Conservation | DAD OHP OCR dis_original OBS |
| 1338 | The spatial and molecular epidemiology of Lyme disease at the frontier of its emergence in eastern Ontario | PCCF CENSUS POP RPDB Lyme Disease Data |

| # | Project Title | ICES Data |
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| 1339 | The survival rate, psychiatric morbidity and the healthcare cost of children born with cleft lip and palate pathology in Ontario | #PDB LHM PCCF INST AVGP/RIE CCRS DAD HCD NACRS NRS ODB OHP OMHRS SDS CENSUS RPDB ALR NDPP OCR ERCLAIM #PDB |
| 1340 | The treatment and outcomes of Colorectal Cancer in patients with a diagnosis of Inflammatory Bowel Disease in Ontario, a population based study | DAD NACRS SDS OHP ODB RPDB OCR OCC NDPP |
| 1341 | The urologic morbidity of urinary tract infections in spinal cord injury patients | CPDB #PDB DN LHM INST DAD NACRS NRS ODB OHP SDS HYPER ODD CONTACT RPDB |
| 1342 | The use and effectiveness of fixed-dose combination antihypertensive medications | PCCF REF SDS CHF OCR |
| 1343 | The use of anticoagulants among continuing care patients in Ontario | CPDB #PDB DN PCCF INST CCRS DAD HCD NACRS ODB OHP RAIHC SDS CHF HYPER ODD OMD CENSUS CONTACT RPDB OUS OUS COMBATAMR C# |
| 1344 | The use of Non-Vitamin K Oral Anticoagulants (NOACs) with and without concurrent medications and the risk of major bleeding in Atrial Fibrillation | CPDB #PDB DN REF INST CCRS DAD HCD NACRS NRS ODB OHP SDS ASTHMA CHF COPD HYPER ODD CENSUS RPDB |
| 1345 | Thiazide dose and type and the risk of kidney stones: a follow-up analysis | #PDB DN LHM PCCF REF INST DAD NACRS ODB OHP SDS CENSUS CONTACT POP RPDB |
| 1346 | THRIVE: TeleHomecare Intervention Evaluation Study | DN PCCF REF STDP/RIE CCRS CPRO DAD HCD NACRS ODB OHP SDS CHF COPD ODD CENSUS RPDB THRIVE Study |

| # | Project Title | ICES Data |
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| 1347 | Thyroid cancer in Ontario: incidental detection, temporal trends, health care access and patient outcomes, 1998-2015 | CPDB IFDB DN LHN PCCF REF QDB OHP CENSUS RPDB CAPE NMS Medical Imaging Inventory |
| 1348 | Thyroid cancer treatment and subsequent fertility diagnosis in young adult females: a retrospective cohort study | CORR DAD NACRS OHP SDS RPDB ETHNIC CIC OCR ORGD ORRS |
| 1349 | TIA and minor stroke Early evaluation And Management for Stroke prevention (TEAMS) | REF DAD RPDB TEAMS database |
| 1350 | Time in Therapeutic Range and Risk of Stroke in Dialysis Patients | IFDB DN LHN PCCF REF CORR DAD NACRS ODB OHP SDS HYPER ODD CENSUS CONTACT POP RPDB OLIS |
| 1351 | Time-trend analysis of use of 5-aminosalicylic acid medications in elderly patients with inflammatory bowel disease and risk of nephrotoxicity | IFDB DN LHN PCCF REF NST DAD NACRS ODB OHP OMHRS SDS CENSUS CONTACT POP RPDB OLIS |
| 1352 | Tools to address the reduction of high health care utilization (CDPoRT development) | CCRS DAD HCD NACRS NRS ODB OHP OMHRS ASTHMA CHF COPD HYPER OCC ODD QAD ORAD RPDB CCHS OCR ORGD |
| 1353 | Toronto Central LHN per capita health care system costs | CPDB IFDB LHN PCCF REF AVGPRICE CCRS DAD HCD NACRS NRS ODB OHP OMHRS SDS CONTACT RPDB ADP CAPE GAPP OHCAS OCCI |
| 1354 | Toronto City LHN - Per Capita Cost-Update | PCCF REF AVGPRICE ESTS0B CCRS DAD HCD NACRS NRS ODB OHP OMHRS SDS RPDB ADP CAPE GAPP OCCI gettag |
| 1355 | Toronto Neighbourhoods Self-Reported Mental Health | LHN PCCF RPDB CCHS Toronto Neighbourhood Crosswalk File |

| # | Project Title | ICES Data |
|------|---|---|
| 1356 | Total Arterial Revascularization Coronary Artery Bypass Surgery in Ontario | DAD NACRS OHP ASTHMA CHF COPD HYPER ODD OMD CENSUS RPDB CAPE ONMARG TRANSFORMATION %getacg |
| 1357 | TIA and Telesroke Evaluation | DN LHN PCCF REF INST AVGPRCE CCRS CPRO DAD HCD NACRS NRS ODB OHP OMHRS SDS CENSUS POP RPDB ADP CAPE GAPP OHCAS OCCL RCSN HYPER ODD Hospital Resource Survey for Stroke Services - Acute, Rehabilitation, Stroke Prevention Longterm care facilities |
| 1358 | Transcatheter closure of patent foramen ovale and its implication in the development of atrial fibrillation | CPDB #PDB DN LHN PCCF REF INST CCRS DAD HCD NACRS NRS ODB OHP OMHRS SDS CHF COPD HYPER OCCL ODD OMD CENSUS CONTACT RPDB ONMARG ORGD CCN %getacg |
| 1359 | Transforming CBPHC Delivery through Comprehensive Performance Measurement and Reporting: Sub-Project Examining Representativeness | DAD NACRS OHP OMHRS ASTHMA CHF COPD HIV HYPER MOMBABY OCCL ODD OMD ORAD RPDB CAPE ONMARG PCPOP CPDB |
| 1360 | Transfusion variation and practices in patients undergoing major gastrointestinal surgery | DN LHN PCCF INST AVGPRCE ESTSOB CCRS DAD HCD NACRS NRS ODB OHP SDS CENSUS RPDB OLIS ONMARG ALR NDPP OCR ESAS %getacg |
| 1361 | Transition of ventilator assisted individuals from the intensive care unit to home: sub-analyses | DN LHN INST AVGPRCE STDPRIC E CCRS CPRO DAD HCD NACRS NRS ODB OHP SDS RPDB Transitional Home Ventilation Service Program |

| # | Project Title | ICES Data |
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| 1362 | Transitions of Care for People with Dementia: Predictive Factors and Health Workforce Implications | DN LHIN PCCF AVGP/ICE STDPRIC E CCRS CPRO DAD HCD NACRS OOB OHP RAICA RAHC ASTHMA CHF COPD HYPER ODD OMD CONTACT POP RPDB CPDB CAPE |
| 1363 | Traumatic Brain Injury (TBI) Report Card | PCCF CCRS DAD HCD NACRS NRS OMHS CONTACT RPDB |
| 1364 | Traumatic Cardiac Arrest in Ontario Canada: A population based analysis of epidemiology, causes, management and outcome | IPDB LHIN PCCF REF INST CCRS DAD HCD NACRS NRS OHP RAHC SDS CONTACT RPDB ERCLAIM LOC ODR OHCAS OTR ORGD |
| 1365 | Treatment and outcomes of splanchic vein thromboses at IOH | CCRS DAD NACRS OOB OHP SDS CENSUS CONTACT RPDB OCR ORGD SVT&IOH |
| 1366 | Treatment at rapid access addiction medicine clinic (META-PHI) | LHIN PCCF INST AVGP/ICE ESTSOB CCRS DAD HCD NACRS NRS OOB OHP OMHS RAHC SDS ASTHMA CHF COPD HYPER ODD OMD RPDB META-PHI |
| 1367 | Treatment With Tyrosine Kinase Inhibitors in Chronic Myeloid Leukemia and Incident Cardiovascular Disease A Population-Based Study | PCCF REF CCRS CPRO DAD HCD NACRS NRS OOB OHP SDS POP RPDB NDPP |
| 1368 | Trends and Management of Childhood Intussusception | IPDB DN PCCF REF DAD HCD NACRS OOB OHP OMHS SDS CHF COPD HYPER ODD OMD CONTACT RPDB |

| # | Project Title | ICES Data |
|------|---|--|
| 1369 | Trends and outcomes in complex aortic valvesurgery:an Ontario population database study | DN REF DAD DOB OHP SDS CHF COPD HYPER ODD CENSUS POP RPDB DEMENTIA CCN |
| 1370 | Trends and outcomes in the managementofpulmonary empyema | PDB LHN PCCF REF INST AVGPRICE STDPRICE DAD NACRS OHP SDS ASTHMA COPD CENSUS CONTACT RPDB CAPE ERCLAM GAPP OCCI ORGO ESTSOB |
| 1371 | Trends and patterns of disparities in mortality among geographic regionsin Ontario, 1990-2013 | LHN PCCF REF DAD OHP ASTHM A CHF COPD HYPER OCC ODD OMD ORAD CENSUS POP RPDB ONMARG CCHS OC OCR ORGO CONTACT |
| 1372 | Trends in aortic valve replacement an Ontario population database study | DN REF DAD DOB OHP SDS CHF COPD HYPER ODD CENSUS POP RPDB DEMENTIA CCN |
| 1373 | Trends in co-morbid physical and psychiatric illness in hospitalized children and youth | CPDB PDB PCCF INST AVGPRICE DAD NACRS OHP OMRS SDS RPDB ONMARG ASTHMA ODD OCR PBD |
| 1374 | Trends in diabetes incidence andscreeningrates in Ontario | OHP ODD CENSUS RPDB CENSUSDA GIS PCPOP |
| 1375 | Trends in echocardiography utilization in Ontario | REF OHP CENSUS RPDB |
| 1376 | Trends in health care resource utilization over time:an age-basedcohortstudy | LHN PCCF REF DAD NACRS OHP OMRS SDS ASTHM A CHF COPD HYPER ODD OMD CENSUS CONTACT RPDB ONMARG CCHS ORGO %getsoag |

| # | Project Title | ICES Data |
|------|--|---|
| 1377 | Trends in Health Care Utilization and Outcomes in Pediatric Inflammatory Bowel Disease in Ontario | IPDB LHN PCCF REF INST AVGP/RE ESTS/GB CCRS DAD HCD NACRS NRS ODB OHP OMRS RAHC SDS ASTHMA CHF COPD HIV HYPER ODD OMD CONTACT RPDB ADP CAPE PCCF CONTACT |
| 1378 | Trends in Patterns of use of Drug Therapy for Rheumatoid Arthritis A Green Shield Canada(GSC) - ODPN Pilot Project | GSC - RA Pilot Project |
| 1379 | Trends in postpartum opioid prescribing: a time series analysis | DN PCCF REF DAD ODB MOMBABY RPDB IPDB |
| 1380 | Trends in prevalence of common chronic respiratory diseases (COPD, asthma, lung cancer and obstructive sleep apnea) and their overlap in Ontario | OCCO ORAD |
| 1381 | Trends in sentinel node biopsy for melanoma in Ontario | IPDB DN LHN PCCF INST DAD NACRS ODB OHP SDS CENSUS POP RPDB ALR OCR |
| 1382 | Trends in stroke care and outcomes in Ontario (TRISCO) | PCCF REF CCRS DAD NACRS NRS ODB OHP CENSUS RPDB ORGD OSR INST NRS SDS CHF COPD HYPER ODD POP |
| 1383 | Trends in the incidence and management of hepatocellular carcinoma in Ontario | IPDB DN PCCF REF DAD NACRS ODB OHP CHF OCCO ODD CENSUS CONTACT POP RPDB OLS ONMARG |
| 1384 | Trends in the risk of paediatric injury by socio-economic status | PCCF DAD NACRS RPDB Hockey registration counts |
| 1385 | Trends in the usage of Xialfax for Dupuytren's Contracture in Ontario | IPDB DN LHN PCCF REF INST DAD NACRS OHP SDS CONTACT RPDB ORGD |
| 1386 | Trends in use of therapies and outcomes of patients undergoing percutaneous coronary interventions in Ontario | DN PCCF HYPER ODD CONTACT |

| # | Project Title | ICES Data |
|------|--|--|
| 1387 | Trends in using Invasive Fractional Flow Reserve (FFR) | CPDB IFDB DN LHN PCCF REF INST DAD NACRS ODS OHP SDS CHF COPD HYPER ODD OMD CENSUS POP RPDB CCN |
| 1388 | Trends in Wait-times for Aortic Stenosis Treatment in Ontario Canada | DN REF DAD NACRS ODS OHP SDS CHF COPD HYPER ODD RPDB DEMENTIA CCN |
| 1389 | Trends over time in pediatric somatization disorders in Ontario children and youth | IFDB LHN PCCF DAD NACRS OHP OMHRS SDS RPDB CC |
| 1390 | TSH level in treatment of hypothyroidism and risk of atrial fibrillation | CPDB IFDB DN LHN PCCF INST CCRS DAD HCD NACRS NRS ODS OHP OMHRS SDS HYPER ODD CENSUS POP RPDB OIS OMMARG POP CAN |
| 1391 | Type of ADT for Prostate Cancer and Risk of Cardiovascular Disease | CPDB IFDB DN LHN PCCF REF AVGPRICE ESTSOB DAD NACRS NRS ODS OHP OMHRS SDS ASTHMA CHF COPD HIV HYPER OCCC ODD ORAD CENSUS CONTACT POP RPDB CAPE OMMARG CHC |
| 1392 | Understanding Differences in Colorectal Cancer Survival Outcomes in Ontario | AVGPRICE ESTSOB CONTACT LHN REF CONTACT ORGD |

| # | Project Title | ICES Data |
|------|---|---|
| 1393 | Understanding Health Care Utilization and Improving Outcomes after Total Joint Arthroplasty | CPDB #PDB DIN PCCF REF INST AVGPRCE ESTSOB CCRS DAD HCD NACRS NRS ODB OHP OMHRS SDS ASTHMA CHF COPD HIPER ODD OMD ORAD CONTACT RPDB CAPE GAPP OCCI OHCAS ONMARG NMS |
| 1394 | Understanding Hepatitis C Virus in the First Nations Population in Ontario: Estimating the Health and Economic Burden | CPDB #PDB DIN LHIN PCCF REF AVGPRCE ESTSOB CCRS DAD HCD NACRS NRS ODB OHP OMHRS SDS HV CENSUS RPDB ADP CAPE GAPP OCCI OHCAS ALR NDPP OCR ORGO Public Health Ontario Laboratory HCV Records Linked to ICES IRS gettag |
| 1395 | Understanding Inequalities in Primary Care: A Decomposition Analysis (Short: HSPRN Decomposing Inequalities) | OBSP |
| 1396 | Understanding persistency in the high-cost category among mental health and addiction patients | DIN LHIN PCCF AVGPRCE CCRS CRRR DAD HCD NACRS NRS ODB OHP OMHRS SDS ASTHMA CHF COPD HV HIPER MOMTABY OCCI ODD OMD ORAD CENSUS RPDB ADP ONMARG ETHNIC CCHS CIC OCR ORGO %gettag DEMENTIA |
| 1397 | Understanding Symptom Profiles and Trajectories in Patients with Breast Cancer in Ontario | ODS PCPOP |
| 1398 | Understanding Symptom Profiles and Trajectories in Patients with Head and Neck Cancer in Ontario | LHIN PCCF INST CCRS DAD HCD NACRS ODB OHP SDS CENSUS RPDB ONMARG ALR CIC OCR ESAS NDPP |

| # | Project Title | ICES Data |
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| 1399 | Understanding Symptom Profiles and Trajectories in Patients with Unresected Pancreatic Cancer Patients in Ontario | LHN PCCF REF CCRS DAD HCD NACRS NRS ODB OHP OMHRS SDS ASTHMA CHF COPD HYPER OCCC ODD OMD ORAD CENSUS CONTRACT RPDB ADP ERCLAIM LOC OCCI OLIS OTR |
| 1400 | Understanding the cancer patient journey: An assessment of symptoms during diagnosis, treatment and palliation for esophageal cancer patients | LHN PCCF INST CCRS DAD HCD NACRS NRS ODB OHP SDS CENSUS RPDB ONMARG ALR CIC OCR ESAS |
| 1401 | Understanding the cancer patient journey: an assessment of symptoms during diagnosis, treatment and palliation for cancer patients | LHN PCCF INST CCRS DAD HCD NACRS NRS ODB OHP SDS CENSUS RPDB ONMARG ALR OCR ESAS DN PCCF REF DAD NACRS ODB OHP SDS RPDB CCN OLIS gettag |
| 1402 | Understanding the Clinical, Social Demographic and Service Utilization Characteristics of Patients on Hospital Alternative Level of Care Rates | DN LHN PCCF REF INST AVGPRCE ESTSIB CCRS DAD HCD NACRS NRS ODB OHP OMHRS SDS CENSUS RPDB ADP CAPE GAPP OCCI OHCAS |
| 1403 | Understanding the growing burden of malignant pleural effusion: incidence, health care utilization and cost | PCCF ESTSIB CCRS DAD HCD NACRS ODB OHP RAICA RAHC SDS CHF CENSUS CONTRACT RPDB ERCLAIM ORGD ALR NDPP OCR gettag |
| 1404 | Understanding the health of Canadian military families and veterans: Special priorities for development of the Comprehensive Military Family Plan | PCCF AVGPRCE CCRS DAD HCD NACRS NRS ODB OHP OMHRS SDS RPDB |

| # | Project Title | ICES Data |
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| 1405 | Understanding the Role of the Family Physician in Early Psychosis Intervention: Recognition and Management by Primary Care | DN PCCF REF INST DAD NACRS ODB OHP SDS CHF COPD HYPER ODD CENSUS CONTACT RPDB OCR ORGD |
| 1406 | Understanding Transitions from Child to Adult Mental Health Services: A Longitudinal Mixed-Methods Study | DN PCCF REF INST DAD ODB OHP SDS ASTHMA CHF COPD HYPER ODD OMD ORAD CONTACT RPDB LYITS |
| 1407 | Underweight, overweight and obesity in children with autism spectrum disorder: Exploring growth using electronic medical record data | IPDB DN PCCF REF DAD HCD NACRS ODB OHP OHRS SDS CHF ODD CENSUS CONTACT RPDB ALR NDPP OCR ORGD |
| 1408 | Universal drug coverage and glycaemic control | IPDB PCCF DAD OHP ODD RPDB OLS |
| 1409 | Urban Aboriginal Health Counts: Advancing Urban Aboriginal Population-Based Health Needs Assessment and Health Service Evaluation in Ontario | ERCLAIM Our Health Counts London |
| 1410 | Urine culturing and antibiotic use in long-term care | IPDB DN LHN REF INST CCRS CPRO DAD HCD NACRS ODB OHP RAIDA RAIHC SDS CONTACT POP RPDB OHCAS ORGD DEMENTIA |
| 1411 | Ursodiol utilization and adherence in Ontario | DN ODB RPDB |
| 1412 | Use and Patient Characteristics of the Ontario Trillium Program | IPDB IPDB DN LHN PCCF DAD NACRS ODB OHP RPDB CANSIM |
| 1413 | Use and utility of cardiac troponin after non-cardiac surgery | IPDB REF INST DAD NACRS OHP SDS CHF COPD HYPER ODD OMD CENSUS CONTACT RPDB OLS ORGD DN LHN PCCF CCRS HCD ODB RAIHC ASTHMA |
| 1414 | Use of Degarelix by men in Ontario | OLS |

| # | Project Title | ICES Data |
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| 1415 | Use of domperidone and risk of serious cardiac events in postpartum women | IPDB INST DAD NACRS OHP SDS RPDB OSR |
| 1416 | Use of Emergency Departments in Ontario by Persons Experiencing Homelessness | IPDB LHN PCCF INST DAD NACRS OHP OMHRS SDS CENSUS CONTACT RPDB |
| 1417 | Use of Mental Health and Addictions-related Services in the South East LHN (AHRQ) | CPDB IPDB LHN PCCF INST DAD NACRS ODB OHP OMHRS CENSUS RPDB |
| 1418 | Use of Mental Health Services in Primary Care, Emergency Departments, and Hospitals: Comparison of Ontario's FHGs and FHOs | CPDB IPDB DN LHN PCCF REF INST CCRS DAD HCD HOBIC NACRS NRS ODB OHP OMHRS RAICA RAHC SDS ASTHM ACHF COPD HV HYPER MOMBABY OCCC ODD OMD ORAD CENSUS CONTACT POP RPDB HCES ADP CAPE CENSUSCA EMERALD OCHS OCR PCPOP |
| 1419 | Use of QT Prolonging Drugs and ECG Monitoring in Oncology Patients in Toronto | DAD NACRS SDS ODB OHP RPDB OCR OBSP NDPP |
| 1420 | Use of Telemedicine among Cancer Patients in Ontario | LHN PCCF REF INST DAD HCD NACRS OHP SDS RPDB OCR ALR CHF COPD ODD |
| 1421 | User vs non-user Characteristics of Screening Activity Report Access: A Cross-Sectional Study | CPDB IPDB LHN DAD NACRS ODB OHP SDS ASTHMA CHF COPD HV HYPER ODD OMD CENSUS RPDB CAPE OBSP OCR CPSO numbers for primary care physician registrants of CCO's SAR |

| # | Project Title | ICES Data |
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| 1422 | Using big data to assess the long-term health care utilization, costs and mortality associated with sepsis | IPDB DN PCCF AVGP/ICE STDP/ICE E CCRS DAD HCD NACRS NRS OOB OHP OMHS RAICA RAHC SDS ODD CENSUS RPDB ADP CAPE ONMARG POPCAN Sepsis cohort |
| 1423 | Using big data to conduct innovative cardiovascular clinical trials | IPDB PCCF REF INST DAD NACRS OHP OMHS SDS ASTHMA CHF COPD HYPER OCCO ODD OMD ORAD POP RPDB PCPOP EMERALD |
| 1424 | Using Edmonton Symptom Assessment System data from an observational data source as a patient outcome | PCCF REF DAD NACRS OHP RPDB ALR NDPP OCR ESAS |
| 1425 | Using Edmonton Symptom Assessment System data from an observational data source as a patient outcome among patients with colorectal cancer | DAD NACRS OHP MOMBABY RPDB OLS |
| 1426 | Using Electronic Medical Record Administrative data Linked Database (EMRALD) to measure community antimicrobial use | IPDB LHIN DAD NACRS OOB OHP CENSUS RPDB CAPE EMRALD |
| 1427 | Using EMRALD to Validate Administrative Data Algorithms to Identify Patients with Neurofibromatosis type 1 | DN LHIN PCCF AVGP/ICE CCRS CORR DAD HCD NACRS NRS OOB OHP OMHS SDS ASTHMA CHF COPD HIV HYPER MOMBABY OCCO ODD OMD ORAD CENSUS RPDB ADP ONMARG ETHNIC ACG software DEMENTIA |
| 1428 | Using Machine Learning Methods to Predict Outcomes for Gastrointestinal Cancer Patients | OPDB LHIN PCCF REF AVGP/ICE ESTSOB DAD HCD NACRS OOB OHP RAICA RAHC ASTHM A CHF COPD HYPER ODD OMD ORAD CENSUS RPDB CAPE ORGO ALR OCR ESAS Symptom Management |

| # | Project Title | ICES Data |
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| 1429 | Using machine learning techniques to predict need for end-of-life care | LHN PCCF NST DAD OHP CENSUS RPDB ONMARG BRTRC |
| 1430 | Using machine learning to predict high healthcare resource utilization | IPDB LHN PCCF REF AVGPRICE ESTSOB CCRS DAD HCD NACRS NRS OQB OHP OMHRS SDS MOMBABY CENSUS CONTACT RPDB CAPE GAPP OLIS PCCF REF AVGPRICE ESTSOB SDS CENSUS ADP CAPE GAPP OCCI OHCAS ONMARG |
| 1431 | Using Ontario Physician Network (PhysNet) data to support the development of Ontario Health Teams (OHT) | CPDB NST DAD NACRS OQB OHP OMHRS SDS CONTACT RPDB CAPE |
| 1432 | Using the CANHEART Cohort to Examine Contemporary Trends in Lipid Management and Cardiovascular Events | CPDB IPDB DN LHN PCCF REF NST AVGPRICE ESTSOB CRR DAD NACRS OQB OHP OMHRS SDS ASTHMA CHF COPD HIV HYPER ODD ORAD CENSUS CONTACT POP RPDB CAPE OLIS ETHNIC CCHS CIC GDML OCR ORGO PHYSNET |
| 1433 | Using the IC LHN Hospital Equity Data to assess health care access, use and outcomes among persons served by the IC LHN hospitals | LHN PCCF CCRS DAD NACRS NRS OQB OHP OMHRS SDS ASTHMA CHF COPD HYPER ODD OMD CONTACT POP RPDB CAPE ONMARG OC OCR PCPOP ICES Hospital Health Equity Variables Dataset / Patient Demographics Survey |
| 1434 | UTI in the ED | DAD NACRS OQB OHP RPDB ut_ih_ed |
| 1435 | Utility of BNP in Improving Diagnosis of Heart Failure (HF) in Transitional Care - BNP Study | OCA_BNP Study |

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| 1436 | Utility ofBNP in Improving Diagnosis ofHeartFailure (HF) in Transitional Care - BNP Study | #DB DAD HCD NACRS ODB QHP RAHC SDS RPDS OHCAS ORGD OCA_BNP study |
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| # | Project Title | ICES Data |
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| 1437 | Utilization and Adverse Outcomes of Ondansetron and Fluorazide Therapy during Pregnancy | CPDB IPDB DIN PCCF REF DAD NACRS ODB OHP SDS ASTHM A CHF COPD HW HYPER MOMBABY OCC ODD ORAD CENSUS CONTACT RPDB ONMARG |
| 1438 | Utilization and outcome of therapy for early breast cancer >= 65 years of age | CPDB IPDB LHN PCCF INST DAD NACRS ODB OHP SDS CENSUS RPDB CAPE ALR NDPP OBSP OCR ORGO |
| 1439 | Utilization of advanced cardiac procedures in Ontario and New York | DIN LHN PCCF REF INST CCRS DAD NACRS NRS ODB OHP SDS CHF HYPER ODD CENSUS CONTACT RPDB |
| 1440 | Utilization of back surgery in Ontario and New York State | CPDB IPDB LHN PCCF INST DAD NRS OHP SDS CHF COPD HYPER ODD ORAD CENSUS POP RPDB |
| 1441 | Utilization of Benzotropine in Ontario | IPDB DIN AVCP/ICE ESTSOB CCRS DAD HCD NACRS ODB OHP RAICA RAHC SDS RPDB |
| 1442 | Utilization of Hematopoietic Cell Transplantation in Ontario and New York | DIN LHN PCCF REF CCRS CORR DAD HCD NACRS NRS ODB OHP OMHRS RAHC SDS ASTHM A CHF COPD HW HYPER MOMBABY OCC ODD OMD ORAD CONTACT RPDB ADP GAPP ONMARG NDPP OCR |

| # | Project Title | ICES Data |
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| 1443 | Utilization of HER2 testing for treatment of metastatic gastric and gastroesophageal junction adenocarcinoma patients: a population-based analysis | LHN INST AVGPRCE ESTSOB CCRS DAD HCD NACRS NRS OGB OHP SDS CENSUS RPDB ONMARG ALR NDPP OCR Symptom Management |
| 1444 | Utilization of Pharmacy-Dispensed Naloxone Kits in Ontario | FPDB DN LHN PCCF REF DAD NACRS OGB OHP SDS ASTHM A COPD HYPER ODD OMD CENSUS RPDB |
| 1445 | Utilization of Tele-Mental Health Services among children and adolescents in Ontario: A population-based study | FPDB LHN PCCF INST DAD NACRS OHP OMHRS CONTACT POP RPDB CAPE TMHP |
| 1446 | Utilization, Effectiveness, and Safety of SGLT2 Inhibitors Among Patients with Type 2 Diabetes Mellitus | FPDB DN PCCF REF DAD NACRS OGB OHP OMHRS SDS ASTHM A CHF COPD HYPER ODD OMD ORAD CENSUS RPDB OLIS ONMARG DEMENTIA ORGO OCR |
| 1447 | Vaccine coverage and safety in children with epilepsy | LHN PCCF REF DAD NACRS OHP CENSUS CONTACT POP RPDB |
| 1448 | Validating a model of disease course in Inflammatory Bowel Disease for use with Health Administrative Data | FPDB PCCF DAD NACRS OHP SDS OCC CENSUS CONTACT RPDB CENSUSCA ERCLAIM POPCAN TOH IBD cohort |
| 1449 | Validating Administrative Data: The Ontario, Manitoba, British Columbia Team | DIN PCCF CCRS CORR CPRO DAD HCD NACRS NRS OGB OHP OMHRS RAICA RAIC SDS COPD HYPER ODD ORAD CENSUS CONTACT RPDB ADP OLIS RAICMDH EMRALD ORGO HY CCHS ASTHMA CHF OMD |

| # | Project Title | ICES Data |
|------|---|---|
| 1450 | Validating incident admissions and estimating length of stay in Ontario's long-term care homes | CPDB #PDB DIN LHN PCCF AVGPRCE STDP/RUC E CCRS CPRO DAD HCD NACRS NRS OGB OHP OMHRS RAICA RAHC SDS ASTHMA CHF COPD HYPER ODD OHD CONTACT POP RPDB LOC ORGD |
| 1451 | Validating the identification of rectal cancer resection through ICES datasets | DAD CONTACT RPDB OCR Ottawa Hospital Rectal Cancer Resection Cohort |
| 1452 | Validation and comparative evaluation of the Bimodal Survival and Implantable Defibrillator Shock (BaSIS) risk score | DIN PCCF REF INST DAD NACRS OGB OHP SDS CHF COPD ODD RPDB BaSIS ICD database |
| 1453 | Validation of a strategy for the identification and characterization of Ontarians with acute type B dissection | PCCF DAD NACRS OHP MOBABY RPDB Validation Ontarians Type B dissection |
| 1454 | Validation of abdominal aortic aneurysm procedure codes in Ontario administrative databases | REF DAD NACRS OHP SDS RPDB Sunnybrook Hospital Data St Michael's Hospital Data |
| 1455 | Validation of algorithms to identify receipt of cardiac magnetic resonance imaging using administrative data in Ontario, Canada | ORIP RPDB Abstracted data for cardiac MRIs |
| 1456 | Validation of BORN-CHI Definition of Low Risk Birth | LHN PCCF INST CCRS DAD HCD NACRS OGB OHP SDS CENSUS RPDB ONMARG ALR CC OCR ESAS BORN Birth hospital crosswalk between BORN BIS organizational IDs and MDHLTC Master Numbering System |
| 1457 | Validation of case-finding algorithms derived from health administrative data for identifying neonatal sepsis | PCCF REF RPDB MCSCS |
| 1458 | Validation of diagnostic algorithms for Venous Thromboembolism Using Linked Health Care Databases | PCCF REF DAD NACRS OHP SDS CHF COPD HYPER MOBABY OCCC ODD OHD CENSUS CONTACT RPDB QLS EMERALD BRTRC CCHS OCR Venous Thromboembolism Patient Master List |
| 1459 | Validation of pediatric urolithiasis diagnostic and surgical codes in Ontario: Evaluation of incidence and outcomes following surgical intervention | DIN OGB OHP RPDB Keays - CHEO nephrolithiasis cohort |
| 1460 | Validation of Prescription rates of statin, ACE/ARB and PPI among diabetic patients aged 66 or above | OGB RPDB CPCSSN/UTOPIAN dataset CPCSSN (Canadian Primary Care Sentinel Surveillance Network) |

| # | Project Title | ICES Data |
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| 1461 | Validation of provincial health administrative data algorithms to identify patients with obstructive sleep apnea (OSA): Feasibility project | CPDB IPDB DIN LHN PCCF REF DAD NACRS ODB OHP OMHRS SDS ASTHM A CHF COPD HYPER ODD OMD CENSUS CONTACT RPDB ADP NMS The TOH Sleep database |
| 1462 | Validation of the iChoose Kidney clinical decisionaid using Ontario data | REF GDML |
| 1463 | Validation of the Ottawa Score | DIN PCCF REF DAD NACRS ODB OHP SDS MOMBABY CONTACT RPDB ETHNIC OCR |
| 1464 | Validation of thoraco-abdominal aortic aneurysm procedures codes in Ontario administrative databases | REF DAD NACRS OHP SDS RPDB Toronto General Hospital/ University Health Network Data St Michael's Hospital Data |
| 1465 | Variability in Reporting of Urine Culture Susceptibility Testing and Impact on Antibiotic Prescribing in Ontario | DIN DAD OHP RPDB OLIS |
| 1466 | Variation in acute care linkage and C difficile infection incidence in long-term care facilities in Ontario | IPDB DIN PCCF REF AVGPRICE ESTS0B DAD NACRS ODB OHP SDS CHF COPD HYPER ODD OMD CENSUS CONTACT RPDB OLIS |
| 1467 | Variation in Diagnostic Imaging Utilization in the ED: A Study of US and Ontario Children's Hospitals | LHN PCCF INST DAD NACRS OHP ASTHMA RPDB |
| 1468 | Variation in non-invasive cardiac diagnostic testing strategies for stable coronary artery disease in Ontario | IPDB DIN LHN PCCF REF DAD NACRS ODB OHP COPD HYPER ODD CENSUS RPDB OCR ETHNIC OC |
| 1469 | Variation in Pediatric Diagnostic Imaging Utilization in the ED: A Study of Ontario Hospitals | LHN PCCF INST DAD OHP ASTHMA RPDB |
| 1470 | Variation in the Care of Elderly-Onset Inflammatory Bowel Disease | IPDB DIN LHN PCCF INST DAD HCD NACRS ODB OHP OCC RPDB ERCLAIM OHCAS OCR PHYSNET The OCCC: Epidemiology and diagnostic lag of IBD in Ontario |

| # | Project Title | ICES Data |
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| 1471 | Variation in IJA Utilization and outcomes in Ontario and Pennsylvania according to patient SES | LHN PCCF REF INST DAD NRS CENSUS POP RPDB |
| 1472 | Variations in the Management of Gastric Cancer in Ontario: Effects on Survival and Cost | IPDB LHN PCCF REF AVGPRICE ESTSOB DAD NACRS OHP SDS CHF COPD HYPER OCCC ODD OMD CENSUS CONTACT RPDB OCCI OLIS ALR OCR CCRS ODB NDPP |
| 1473 | Vascular Performance Measurement Report 2020 | LHN PCCF REF INST DAD HCD NACRS OHP SDS COPD HYPER ODD OMD CENSUS POP RPDB CAPE |
| 1474 | Venous Thromboembolism (VTE) in Incident Kidney Transplant Recipients | SDS |
| 1475 | Venous Thromboembolism in Thoracic Surgery Patients: A Population-Based Study | PCCF REF DAD NACRS OHP SDS CONTACT RPDB ORGD ALR NDPP OCR gskq ASTHMA CHF COPD HIV HYPER ODD OMD ESAS |
| 1476 | Violence and psychosis | LHN PCCF DAD NACRS OHP OMRS CENSUS RPDB ORGD CIC |
| 1477 | Wait time package for head and neck cancer patients - does it impact overall survival? | CPDB IPDB LHN PCCF INST DAD NACRS ODB OHP SDS CENSUS CONTACT RPDB CAPE CCHS |
| 1478 | Wait times for hip and non-hip fracture surgery after health system funding reform: a population-based time-series analysis | DN PCCF REF DAD ODB OHP SDS HYPER ODD CENSUS RPDB ETHNIC CIC |

| # | Project Title | ICES Data |
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| 1479 | What are the patterns of healthcare utilization among people with HIV and HCV infection (retention, transition, and attrition from care settings)? | CPDB IPDB PCCF AVGPRKE DAD NACRS ODB CHIP OMHRS SDS ASTHMA CHF COPD HIV HYPER ODD OMD CONTACT RPDB CAPE CIC OCR ORGD data_dhc Infection_DataDictionary_V10_Dec4_2015 |
| 1480 | What are the time trends in proportions and characteristics of youth diagnosed with anxiety over the past 20-30 years? | IPDB PCCF REF DAD NACRS CHIP OMHRS SDS CENSUS POP RPDB ONMARG ORGD CIC |
| 1481 | What Determinants are Driving the Consistent Trends in Socioeconomic Inequities in Ischemic Heart Disease Observed from 1994 to 2012? | LHIN PCCF DAD CHIP HYPER ODD OMD CENSUS CONTACT POP RPDB NPHS ONMARG COHS ORGD |
| 1482 | Which patient factors impact geriatric rehabilitation outcomes? | INST CCRS DAD HCD NACRS NRS ODB CHIP RPDB Health card numbers-TRI Inpatient Geri Rehab |
| 1483 | Your Symptoms Matter Pilot ICES-ORN Framework | PCCF REF DAD NACRS CHIP SDS RPDB Your Symptoms Matter |
| 1484 | YOUTH PRESENTING TO ONTARIO EMERGENCY DEPARTMENTS WITH SUBSTANCE MISUSE | DIN LHIN PCCF REF INST AVGPRKE ESTSDB CCRS DAD HCD NACRS NRS ODB CHIP OMHRS SDS CENSUS CONTACT POP RPDB ADP CAPE GAPP OCCI ONMARG CIC ORGD NMS |

Appendix D – Privacy Impact Assessments

| # | Title | Open Date | PIA Completion Date | PIA Type | Assessment Determination | PIA Status | Risks Identified | Risk Status | Recommendations | Recommendation Status | Manner of Implementing Recommendation | Date Recommendation Was or Is Expected to be Implemented |
|----|--|-----------|---------------------|------------------|--------------------------|--------------|------------------|-------------|--|-----------------------|---------------------------------------|--|
| 1 | CCO Data Elements Revision | 1-Nov-16 | 6-Nov-16 | Data Holding | PIA required | PIA complete | None | N/A | None | N/A | N/A | N/A |
| 2 | TARGetKids! | 1-Nov-16 | 9-Feb-17 | Data Holding | PIA required | PIA complete | None | N/A | None | N/A | N/A | N/A |
| 3 | Coroner's Data Return | 20-Aug-16 | 7-Nov-16 | Data Holding | PIA required | PIA complete | None | N/A | None | N/A | N/A | N/A |
| 4 | Qualitative Coding Software | 8-Nov-16 | 16-Dec-16 | Business Process | PIA required | PIA complete | None | N/A | None | N/A | N/A | N/A |
| 5 | NEJM | 11-Nov-16 | 30-Nov-16 | Business Process | PIA required | PIA complete | None | N/A | None | N/A | N/A | N/A |
| 6 | ORNGE | 22-Nov-16 | 16-Feb-17 | Data Holding | PIA required | PIA complete | None | N/A | None | N/A | N/A | N/A |
| 7 | Bloom Filter | 30-Jan-17 | 30-Jan-17 | Technology | PIA required | PIA complete | None | N/A | None | N/A | N/A | N/A |
| 8 | Coroner's Data - Death Investigations | 7-Dec-16 | 9-Feb-17 | Data Holding | PIA required | PIA complete | None | N/A | None | N/A | N/A | N/A |
| 9 | Mobile Devices | 7-Dec-16 | 23-Mar-17 | Technology | PIA required | PIA complete | None | N/A | 1) Amend login notification message to remind users that using smart phones to copy ICES data or confidential information is prohibited. | Closed | 1) Login notification was amended. | 17-Apr-17 |
| 10 | Canadian Primary Care Sentinel Surveillance Network (CPCSSN) | 8-Nov-16 | Withdrawn | Data Holding | PIA not required | Withdrawn | N/A | N/A | PIA not required. Request withdrawn. There is no data holding, information system, technology or program at issue. | N/A | N/A | N/A |
| 11 | Greenshield | 12-Dec-16 | Withdrawn | Data Holding | PIA required | Withdrawn | N/A | N/A | PIA not required. Request withdrawn. There is no data holding, information system, technology or program at issue. | N/A | N/A | N/A |
| 12 | General Medicine Inpatient Clinical Registry (GEMINI) | 6-Dec-16 | 28-Feb-17 | Data Holding | PIA required | PIA complete | None | N/A | None | N/A | N/A | N/A |

| # | Title | Open Date | PIA Completion Date | PIA Type | Assessment Determination | PIA Status | Risks Identified | Risk Status | Recommendations | Recommendation Status | Manner of Implementing Recommendation | Date Recommendation Was or Is Expected to be Implemented |
|----|--|-----------|---------------------|------------------|--------------------------|--------------|------------------|-------------|--|-----------------------|--|--|
| 13 | College of Physicians and Surgeons of Ontario (CPSO) | 20-Jan-17 | 14-Mar-17 | Data Holding | PIA required | PIA complete | None | N/A | None | N/A | N/A | N/A |
| 14 | DCIS Data Restore and Coding Fix | 29-Dec-16 | Withdrawn | Technology | PIA not required | Withdrawn | N/A | N/A | N/A | N/A | N/A | N/A |
| 15 | OHTN Amendment #2 | 1-Feb-17 | 10-Feb-17 | Data Holding | PIA required | PIA complete | None | N/A | None | N/A | N/A | N/A |
| 16 | EMERALD RAE Migration Phase 1 | 13-Jan-17 | 16-Feb-17 | Technology | PIA required | PIA complete | None | N/A | None | N/A | N/A | N/A |
| 17 | ORRS Data Disclosure to CCO | 13-Jan-17 | 27-Feb-17 | Disclosure | PIA required | PIA complete | None | N/A | None | N/A | N/A | N/A |
| 18 | Data Safe Haven | 19-Jan-17 | 18-Jul-18 | Business Process | PIA required | PIA complete | None | N/A | 1) External project team members are required to sign ICES Confidentiality Agreement. | Closed | 1) Requirement communicated to PIA requestor. | 1) 18-Jul-2018 |
| | | | | | | | | | 2) Sick Kids must sign ICES Confidentiality Agreement or equivalent. | Closed | 2) Confidentiality provision were embedded in service agreement with Sick Kids. | 2) 18-Jul-2018 |
| | | | | | | | | | 3) Access by all ICES agents including Sick Kids System Administrators must be logged. | Closed | 3) Sick Kids IT has configured logging on the system in place and it is agreed that these logs would be sent to ICES upon request. | 3) 18-Jul-2018 |
| | | | | | | | | | | | | |

| # | Title | Open Date | PIA Completion Date | PIA Type | Assessment Determination | PIA Status | Risks Identified | Risk Status | Recommendations | Recommendation Status | Manner of Implementing Recommendation | Date Recommendation Was or Is Expected to be Implemented |
|----|--|-----------|---------------------|--------------|--------------------------|--------------|---|-------------|---|-----------------------|---|--|
| | | | | | | | | | 4 Clearly define roles and responsibilities for handling privacy and security incidents between ICES and Sick Kids. This should include contact information for both ICES and Sick Kids and SLAs pertaining to notification and requirements for cooperation. | Closed | 4) Required information was incorporated into service agreement with Sick Kids. | 4) 18-Jul-2018 |
| | | | | | | | | | 5) Terms and conditions pertaining to termination of services must be specified in the agreement to be signed with Sick Kids | Closed | 5) Required information was incorporated into service agreement with Sick Kids. | 5) 18-Jul-2018 |
| 19 | POGO (DSA Amendment) | 1-Feb-17 | 1-Feb-17 | Data Holding | PIA required | PIA complete | None | N/A | None | N/A | N/A | N/A |
| 20 | New born Screening Ontario (NSO) | 1-Feb-17 | 9-Feb-17 | Data Holding | PIA required | PIA complete | None | N/A | None | N/A | N/A | N/A |
| 21 | MCSS Amendment (Annual Disclosure + TPR Restriction) | 30-Jan-17 | 24-Feb-17 | Data Holding | PIA required | PIA complete | 1) This will represent the first time a Ministry leverages DAS services to directly access and link their own data with data that originates in other arms of government. This, and the stated desire for a comparatively prolonged period of access (3-5 years), presents some risk of | Mitigated | 1) This risk can be significantly mitigated by application of all DAS policies, procedures and agreements, for Third Party Research to this activity by MCSS. This includes the process for vetting Research Outputs, the purposes for which include relevance to the approved research objectives. b. The DSA should explicitly define, and limit, the MCSS Third Party Research in terms of the FIPPA and PHIPA definitions of research. c. The DSA should include language that acknowledges the possibility of relevant | Closed | 1) DAS staff were made aware that its policies, procedures and agreements applied to MCSS. The DSA was drafted to include the required information. | 1-Mar-17 |

| # | Title | Open Date | PIA Completion Date | PIA Type | Assessment Determination | PIA Status | Risks Identified | Risk Status | Recommendations | Recommendation Status | Manner of Implementing Recommendation | Date Recommendation Was or Is Expected to be Implemented |
|----|---|-----------|---------------------|--------------|--------------------------|--------------|--|-------------|---|-----------------------|--|--|
| | | | | | | | being perceived externally as unauthorized big data analytics rather than research. | | legislative change or guidance and the parties' commitment to amend the agreement and any related MCSS Third Party Research agreement if warranted. | | | |
| | | | | | | | 2) At the time of completing this PIA (and likely the DSA), there is no draft research plan for MCSS TPR. This creates a risk of misunderstanding between the parties. This risk is compounded by our inability to know on what terms MCSS will be able to secure REB approval, and whether or not ICES will, itself, be comfortable with these. | Mitigated | 2) The intention of MCSS to access its data, and other ICES Data, for these purposes should be explicitly couched in terms that acknowledge these contingencies and affirm appropriate ICES discretion. For these reasons, the agreement should not explicitly commit ICES to create a database called "HASAD" (MCSS' stated preference) or host it for any specified period (a preference for 3-5 years has been expressed). | Closed | 2) The DSA was drafted to address this recommendation. | 1-Mar-17 |
| 22 | Disclosure of CPSO Numbers to BORN | 16-Feb-17 | 17-Feb-17 | Disclosure | PIA required | PIA complete | None | N/A | None | N/A | N/A | N/A |
| 23 | Primary Care Population (PCPOP) - ICES-Derived Data Holding | 21-Mar-17 | 6-Jun-17 | Data Holding | PIA required | PIA complete | None | N/A | None | N/A | N/A | N/A |

| # | Title | Open Date | PIA Completion Date | PIA Type | Assessment Determination | PIA Status | Risks Identified | Risk Status | Recommendations | Recommendation Status | Manner of Implementing Recommendation | Date Recommendation Was or Is Expected to be Implemented |
|----|--|-----------|---------------------|------------------|--------------------------|--------------|------------------|-------------|--|-----------------------|---------------------------------------|--|
| 24 | Derived Dataset - On/Off Reserve | 21-Sep-17 | 11-Apr-18 | Data Holding | PIA required | PIA complete | None | N/A | None | N/A | N/A | N/A |
| 25 | Work From Home | 1-Jun-18 | N/A | Technology | PIA not required | N/A | None | N/A | N/A. Any recommendations related to work from home resulted from a review of supporting work from home documentation and not from a PIA, which was determined not necessary. | N/A | N/A | N/A |
| 26 | IT Renewal Service Provider | 21-Mar-17 | 18-Apr-17 | Technology | PIA required | PIA complete | None | N/A | None | N/A | N/A | N/A |
| 27 | RPDB Military and Veterans Flag | 13-Mar-17 | Withdrawn | Data Holding | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| 28 | ICES-CCN Service Agreement | 6-Apr-17 | 26-Apr-17 | Business Process | PIA required | PIA complete | None | N/A | None | N/A | N/A | N/A |
| 29 | ICES CCN DSA Amendment | 22-Mar-17 | 10-Apr-17 | Data Holding | PIA required | PIA complete | None | N/A | None | N/A | N/A | N/A |
| 30 | Nova Scotia QEII Data Disclosure PIA | 11-Apr-17 | 10-Oct-17 | Disclosure | PIA required | PIA complete | None | N/A | None | N/A | | |
| 31 | Pregnant Women Cohort | 3-Apr-17 | Withdrawn | Data Holding | PIA not required | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| 32 | CIHI High Cost Users Cohort | 2-May-17 | 4-May-17 | Data Holding | PIA required | PIA complete | None | N/A | None | N/A | N/A | N/A |
| 33 | OCCC Disclosure (to CCO) | 12-May-17 | 22-Aug-17 | Disclosure | PIA required | PIA complete | None | N/A | None | N/A | | |
| 34 | CCO Data - Symptom Management and OCR variable revision | 12-May-17 | 27-Jun-17 | Data Holding | PIA required | PIA complete | None | N/A | None | N/A | N/A | N/A |
| 35 | MOS HIP-ICES Data linkage - a Retrospective Cohort Study | 18-Jul-17 | 10-Jan-18 | Data Holding | PIA required | PIA complete | None | N/A | None | N/A | N/A | N/A |

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|----|---|-----------|---|------------------|--------------------------|--------------|------------------|-------------|-----------------|-----------------------|---------------------------------------|--|
| 36 | Drug Identification Number | 18-Jul-17 | 1-Oct-17 | Data Holding | PIA required | PIA complete | None | N/A | None | N/A | N/A | N/A |
| 37 | CPCSSN 2017 | 31-Jul-17 | | Data Holding | PIA required | PIA complete | None | N/A | None | N/A | N/A | N/A |
| 38 | FHT - Inter-professional Full Time Equivalent | 8-Aug-17 | 11-Oct-17 | Data Holding | PIA required | PIA complete | None | N/A | None | N/A | N/A | N/A |
| 39 | CPRO - Variables Update | 8-Aug-17 | 18-Aug-17 | Data Holding | PIA required | PIA complete | None | N/A | None | N/A | N/A | N/A |
| 40 | ETHNIC - CUD to GUD | 14-Aug-17 | 24-Aug-17 | Data Holding | PIA required | PIA complete | None | N/A | None | N/A | N/A | N/A |
| 41 | CCN-ECHO dataset | 9-Aug-17 | 21-Aug-17 | Data Holding | PIA required | PIA complete | None | N/A | None | N/A | N/A | N/A |
| 42 | CCO-ORRS Update | 18-Aug-17 | 18-Aug-17 | Data Holding | PIA required | PIA complete | None | N/A | None | N/A | N/A | N/A |
| 43 | DQIM & DPD Data Quality Reporting | 16-Aug-17 | TBD. Pending further information from change owner. | Business Process | PIA required | On hold | None | N/A | None | N/A | N/A | N/A |
| 44 | The CPSO Public Register | 16-Aug-17 | On hold | Data Holding | PIA required | On hold | None | N/A | None | N/A | N/A | N/A |
| 44 | OHTN Amendment #3 | 25-Aug-17 | 27-Oct-17 | Data Holding | PIA required | PIA complete | None | N/A | None | N/A | N/A | N/A |
| 45 | CIC (IRCC) Extension Letter | 21-Sep-17 | 22-Sep-17 | Data Holding | PIA required | PIA complete | None | N/A | None | N/A | N/A | N/A |
| 46 | Combining EFFECT datasets | 21-Sep-17 | 2-Nov-17 | Data Holding | PIA required | PIA complete | None | N/A | None | N/A | N/A | N/A |
| 47 | MOHLTC Out-of-Province In-Patient | 22-Sep-17 | 25-Oct-17 | Data Holding | PIA required | PIA complete | None | N/A | None | N/A | N/A | N/A |

| # | Title | Open Date | PIA Completion Date | PIA Type | Assessment Determination | PIA Status | Risks Identified | Risk Status | Recommendations | Recommendation Status | Manner of Implementing Recommendation | Date Recommendation Was or Is Expected to be Implemented |
|----|--|-----------|---------------------|--------------|--------------------------|--------------|------------------|-------------|-----------------|-----------------------|---------------------------------------|--|
| | Hospital Claim Data | | | | | | | | | | | |
| 48 | Postal Code-LHIN Crosswalk | 2-Oct-17 | 16-May-18 | Data Holding | PIA required | PIA complete | None | N/A | None | N/A | N/A | N/A |
| 49 | MOHLTC OLIS - LOINC records update | 27-Oct-17 | 3-Mar-18 | Data Holding | PIA required | PIA complete | None | N/A | None | N/A | | |
| 50 | CIHI Pop Grouper | 26-Oct-17 | 31-Oct-17 | Data Holding | PIA required | PIA complete | None | N/A | None | N/A | N/A | N/A |
| 51 | OHS - Cohort Disclosure | 16-Nov-17 | On hold | Disclosure | PIA required | On hold | None | N/A | None | N/A | N/A | N/A |
| 52 | Health Canada Drug Product Database | 4-Dec-17 | 12-Jan-18 | Data Holding | PIA required | PIA complete | None | N/A | None | N/A | N/A | N/A |
| 53 | ORNGE - Additional Variables | 4-Dec-17 | 11-Dec-17 | Data Holding | PIA required | PIA complete | None | N/A | None | N/A | N/A | N/A |
| 54 | Inuit Partner - Partnership Agreement | 8-Dec-17 | 14-Dec-17 | Data Holding | PIA required | PIA complete | None | N/A | None | N/A | N/A | N/A |
| 55 | OHTN Amendment #5 - Refresh | 19-Dec-17 | 15-Oct-18 | Data Holding | PIA required | PIA complete | None | N/A | None | N/A | N/A | N/A |
| 56 | HSSO formerly OACCAC | 27-Dec-17 | 29-Jan-18 | Data Holding | PIA required | PIA complete | None | N/A | None | N/A | N/A | N/A |
| 57 | MOHLTC - ODR Data Update | 22-Dec-17 | 11-Jan-18 | Data Holding | PIA required | PIA complete | None | N/A | None | N/A | N/A | N/A |
| 58 | Ontario Physician Workforce Database (OPWD) - OPHRDC | 17-Aug-18 | 17-Aug-18 | Data Holding | PIA required | PIA complete | None | N/A | None | N/A | N/A | N/A |
| 59 | MOHLTC - OCCI Data | 8-Jan-18 | 23-Jan-18 | Data Holding | PIA required | PIA complete | None | N/A | None | N/A | N/A | N/A |

| # | Title | Open Date | PIA Completion Date | PIA Type | Assessment Determination | PIA Status | Risks Identified | Risk Status | Recommendations | Recommendation Status | Manner of Implementing Recommendation | Date Recommendation Was or Is Expected to be Implemented |
|----|---|-----------|--|------------------|--------------------------|------------------|------------------|-------------|-----------------|-----------------------|---------------------------------------|--|
| 60 | Macros using CUD + GUD | 5-Feb-18 | In progress | Technology | PIA required | Sign-off pending | None | N/A | None | N/A | N/A | N/A |
| 61 | Non-Insured Health Benefits (NIHB) | 4-Feb-18 | TBD. In progress | Data Holding | PIA required | Requestor review | None | N/A | None | N/A | | N/A |
| 62 | IRCC Renewal 2018 | 15-Feb-18 | TBD. Awaiting DSA to update obligations. | Data Holding | PIA required | Sign-off pending | None | N/A | None | N/A | N/A | N/A |
| 63 | Alliance CUD 2018 | 27-Feb-18 | Ongoing | Data Holding | PIA required | PIA complete | None | N/A | None | N/A | N/A | N/A |
| 64 | TGLN - 2018 variable update | 1-Mar-18 | 15-Mar-18 | Data Holding | PIA required | PIA complete | None | N/A | None | N/A | N/A | N/A |
| 65 | Training using simulated datasets | 26-Feb-18 | 27-Apr-18 | Business Process | PIA required | PIA complete | None | N/A | None | N/A | N/A | N/A |
| 66 | ICES Physician Database (IPDB) - Derived ICES Data Holding | 2-Apr-18 | On hold | Data Holding | PIA required | On hold | None | N/A | None | N/A | N/A | N/A |
| 67 | CCO NDFP - ePolicy variable | 9-Apr-18 | 9-Apr-18 | Data Holding | PIA required | PIA complete | None | N/A | None | N/A | N/A | N/A |
| 68 | Dementia Derived Cohort | 9-Apr-18 | 27-Apr-18 | Data Holding | PIA required | PIA complete | None | N/A | None | N/A | N/A | N/A |
| 69 | MOHLTC RPDB Eligibility Gaps - Data Validation Disclosure | 3-May-18 | 2018-May-15 | Data Holding | PIA required | PIA complete | None | N/A | None | N/A | N/A | N/A |
| 70 | Health Quality Ontario (HQO) Provider Reporting DSA refresh | 1-Aug-18 | 1-Aug-18 | Data Holding | PIA required | PIA complete | None | N/A | None | N/A | N/A | N/A |
| 71 | StatsCan Online Open Licence | 8-May-18 | 13-Jul-18 | Data Holding | PIA required | PIA complete | None | N/A | None | N/A | N/A | N/A |

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|----|--|-----------|---|------------------|--------------------------|--------------|------------------|-------------|-----------------|-----------------------|---------------------------------------|--|
| 72 | Community Health Centre (CHC) Encounter Data | 9-May-18 | 10-Jul-18 | Data Holding | PIA required | PIA complete | None | N/A | None | N/A | N/A | N/A |
| 73 | Partner Secondment Agreement – ICES Staff | 17-Apr-18 | TBD. Pending information from change owner. | Business Process | PIA required | On hold | N/A | N/A | N/A | N/A | N/A | N/A |
| 74 | Canadian Urban Environmental Health Research Consortium (CANUE) | 8-May-18 | TBD. Pending information from change owner. | Data Holding | PIA required | On hold | N/A | N/A | N/A | N/A | N/A | N/A |
| 75 | New born Screening Ontario (NSO) Amendment #1 | 23-May-18 | 28-May-18 | Data Holding | PIA required | PIA complete | None | N/A | None | N/A | N/A | N/A |
| 76 | BORN - BIS refresh 2012 - present | 28-May-18 | 5-Jun-18 | Data Holding | PIA required | PIA complete | None | N/A | None | N/A | | |
| 77 | First Nations SAS Formats | 6-Sep-18 | 6-Sep-18 | Data Holding | PIA required | PIA complete | None | N/A | None | N/A | | |
| 78 | Ontario Registrar General - Deaths | 11-Jun-18 | 11-Jun-18 | Data Holding | PIA required | PIA complete | None | N/A | None | N/A | N/A | N/A |
| 79 | Indigenous and Northern Affairs Canada (INAC) - Indian Registry System (IRS) | 11-Jun-18 | 3-Jul-18 | Data Holding | PIA required | PIA complete | None | N/A | None | N/A | N/A | N/A |
| 80 | Natural Language Processing Lab Tools & Resources | 20-Jun-18 | TBD. Work ongoing. | Technology | PIA required | Ongoing | In progress | N/A | In progress | N/A | N/A | N/A |
| 81 | Health Quality Ontario (HQP) Data Disclosure | 20-Jun-18 | 10-Jul-18 | Disclosure | PIA required | PIA complete | None | N/A | None | N/A | N/A | N/A |

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|----|---|-----------|---------------------|------------------|--------------------------|--------------|------------------|-------------|-----------------|-----------------------|---------------------------------------|--|
| 82 | TRIBE-AKI Study | 27-Jun-18 | Withdrawn | Data Holding | PIA required | Withdrawn | None | N/A | None | N/A | N/A | N/A |
| 83 | Ontario Health Study (OHS) DSA Amendment #1 | 24-Jul-18 | 28-Nov-18 | Data Holding | PIA required | PIA complete | None | N/A | None | N/A | N/A | N/A |
| 84 | CorHealth Amendment #3 | 27-Jun-18 | 17-Jul-18 | Data Holding | PIA required | PIA complete | None | N/A | None | N/A | N/A | N/A |
| 85 | Métis Household Survey Data | 27-Jun-18 | 17-Jul-18 | Data Holding | PIA required | PIA complete | None | N/A | None | N/A | N/A | N/A |
| 86 | EFFECT Amendment - ICES Approval | 14-Aug-18 | 17-Jan-19 | Data Holding | PIA required | PIA complete | None | N/A | None | N/A | N/A | N/A |
| 87 | MCCSS - Social Services Ontario - Supplementary Information | 13-Aug-18 | 13-Aug-18 | Data Holding | PIA required | PIA complete | None | N/A | None | N/A | N/A | N/A |
| 88 | Re-Identification Risk Assessment - Primary Care Teams - Provider Reporting | 18-Jul-18 | Withdrawn | Business Process | PIA required | Withdrawn | N/A | N/A | N/A | N/A | N/A | N/A |
| 89 | Flu and Other REspiratory Virus rEseaRch (FOREVER) cohort | 2-Aug-18 | 17-Jan-19 | Data Holding | PIA required | PIA complete | None | N/A | None | N/A | N/A | N/A |

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|----|------------------------------|-----------|---------------------|------------|--------------------------|--------------|---|-------------|---|-----------------------|---|--|
| 90 | Publishing Citrix Externally | 28-May-18 | 4-Jun-18 | Technology | PIA required | PIA complete | 1) ICES' Remote Access Policy prohibits remote access to the RAE. | Eliminated | <p>1) Amend Remote Access Policy to permit remote access to the RAE (including ICES' Data Safe Haven). In addition, this policy should stipulate additional requirements for each type of remote access (Intranet, LAN, RAE, IDAVE). With respect to remote access to the RAE, at a minimum, the requirements must include the following:</p> <ol style="list-style-type: none"> 1. Prohibition on copying any ICES data off the RAE, e.g., through screen shots or photographs. (Offloading ICES data is physically impossible). 2. Prohibition on sharing access credentials including passwords or tokens. 3. For ICES staff granted access to Fully-identified Data or Coded Data at Levels 0-2, a requirement to limit the location of access to a private space within one's home where the risk of one's screen being viewed by others is very low. 4. For ICES students who have a demonstrable need, and are granted, access to Coded Data at Level 3, a requirement to access the RAE only within a private location where the risk of one's screen being viewed by others is low or very low. (All | Closed | 1) Recommendation was addressed through implementation of a substantially revised Remote Access Policy. | 1-Mar-19 |

| # | Title | Open Date | PIA Completion Date | PIA Type | Assessment Determination | PIA Status | Risks Identified | Risk Status | Recommendations | Recommendation Status | Manner of Implementing Recommendation | Date Recommendation Was or Is Expected to be Implemented |
|---|-------|-----------|---------------------|----------|--------------------------|------------|--|-------------|--|-----------------------|---|--|
| | | | | | | | | | other ICES students requiring remote access must continue to receive access to Level 4 Risk-Reduced Coded Data through ICES' IDAVE.) 5. A requirement to take all other necessary precautions to shield one's screen from being viewed by others. 6. A requirement to lock or power down computers immediately upon leaving them unattended. 7. Re-enforcement of ICES' prohibition on accessing ICES data concurrently with non-ICES clinical or research data, whether identified or not. 8. Re-enforcement of one's duty to notify ICES' Chief Privacy Officer immediately upon detection of an incident of suspected incident. | | | |
| | | | | | | | 2) ICES' Work From Home Policy permits remote access to the RAE through an ICES laptop only. | Eliminated | 2) Amend Work From Home Policy to permit remote access to the RAE from any computer. | Closed | 2) Recommendation was addressed through implementation of a substantially revised Remote Access Policy. | 1-Mar-19 |

| # | Title | Open Date | PIA Completion Date | PIA Type | Assessment Determination | PIA Status | Risks Identified | Risk Status | Recommendations | Recommendation Status | Manner of Implementing Recommendation | Date Recommendation Was or Is Expected to be Implemented |
|---|-------|-----------|---------------------|----------|--------------------------|------------|---|-------------|---|-----------------------|---|--|
| | | | | | | | 3) ICES' Confidentiality Agreement does not contain an explicit provision governing remote access | Eliminated | 3) Amend ICES' Confidentiality Agreement to include a provision(s) governing remote access. E.g. "Where accessing ICES Confidential Information from outside of ICES (such as through a remote desktop), take all reasonable measures to avoid disclosing ICES Confidential Information to others, including shielding screens from "shoulder-surfers" and locking or powering down computers immediately when left unattended." (An alternative, or additional, option is to create a simple Terms of Use Agreement for remote access at ICES. This could be a one page document requiring the user's signature or, for easier administration and tracking, a pop-up message asking the user to agree at the time of logging into the RAE remotely. The terms would include important safeguards including those identified above at 3(3)a.) | Closed | 3) Confidentiality Agreement was amended to include the recommended provisions. | 1-Jun-18 |

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| | | | | | | | 4) ICES students who have a demonstrable need, and are granted, access to Coded Data at Level 3 enter will enter into ICES' Confidentiality Agreement and receive privacy and security orientation like all other ICES students and staff. Yet neither the Confidentiality Agreement or privacy and security orientation explicitly address requirements for conducting work remotely. (In the case of ICES staff, they are at least required to enter into the Work From Home Application & Agreement that imposes relevant remote access obligations.) | Eliminated | 4) This scenario currently applies only to the small subset of ICES students who will be accessing ICES' Data Safe Haven during the summer of 2018, who have already signed ICES' Confidentiality Agreement and received privacy and security orientation. The requirements identified above at 3(3)(a) of the PIA must be communicated to the ICES students prior to providing access to the Data Safe Haven and/or ICES data. Also, these students should be required to re-sign an updated version of ICES' Confidentiality Agreement that includes the proposed provision identified above at 3(3)(d) of the PIA. In future, ICES students falling in this particular category of data access should be provided a copy of the Remote Access Policy, once revised and approved, which they are obliged to know and adhere to by entering into ICES' Confidentiality Agreement. | Closed | 4) The requirements identified at 3(3)(a) of the PIA were communicated to the ICES students prior to providing access to the Data Safe Haven and/or ICES data. Also, these students were required to re-sign an updated version of ICES' Confidentiality Agreement that includes the proposed provision identified above at 3(3)(d) of the PIA. | 30-Jun-18 |

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| | | | | | | | 5) Introduction of the proposed web-based method of remote access to the RAE, although assessed and deemed secure by ICES' Security, is the type of technological and business change that warrants incremental implementation. Such an approach would limit the scale of, and increase ICES' ability to manage and address, any unforeseen risks. | Eliminated | It is recommended that ICES considers restricting use of web-based remote access to the RAE specifically to the small subset of ICES students who require access to ICES' Data Safe Haven for approved ICES projects to be conducted during the summer of 2018. This should be considered pilot testing and any unforeseen risks can be identified and mitigated before permitting ICES staff to leverage the new remote access method. This approach also allows time to make the required policy and agreement revisions recommended above, which are subject to an internal vetting process that takes time. | Closed | ICES restricted use of web-based remote access to the RAE specifically to the small subset of ICES students who required access to ICES' Data Safe Haven for approved ICES projects to be conducted during the summer of 2018. Only after the summer did ICES make web-based remote access broadly available to other agents within ICES in accordance with the release of the substantially revised Remote Access Policy. | 1-Jun-18 |
| 91 | Health Artificial Intelligence & Data Analysis Platform + Data Safe Haven (HAIDAP + DSH) | 25-Jun-18 | TBD | Technology | PIA required | On hold | N/A | N/A | N/A | N/A | N/A | N/A |
| 92 | ETHNIC - sharing the algorithm | 30-Jul-18 | 26-Mar-19 | Data Holding | PIA required | PIA complete | None | N/A | N/A | N/A | N/A | N/A |
| 93 | MOSHIP Amendment #1 | 9-Oct-18 | 9-Oct-18 | Data Holding | PIA required | PIA complete | None | N/A | None | N/A | N/A | N/A |

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| 94 | Ministry of Community Safety & Correctional Services (MCSCS) - Corrections Ontario | 1-Aug-18 | TBD | Data Holding | PIA required | On hold | None | N/A | <p>1) The emphasis on the case and the criminal proceedings in section 64 suggests that this Part is intended to authorize disclosure of particulars relating to a small number of individuals, and may not expressly authorize a disclosure of the CORR Dataset. ICES is unable to confirm whether or not the proposed collection is consistent with the reasonable expectations of the individuals as required by legislation.</p> <p>Any collection of information disclosed under these authorities will require the inclusion of a warranty in the DSA, by the disclosing party that such transfer of personal information is authorized. Such warranty must be accompanied by the appropriate indemnity.</p> <p>Corrections Ontario is statutorily prohibited – subject to additional Ministerial approvals - from offering an indemnity so any liability borne out of the receipt of information which may not be authorized shall be borne solely by ICES.</p> <p>Executive level input is likely required.</p> | Open | TBD | N/A |

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| 95 | TGLN - 2018 HCN Disclosure | 13-Aug-18 | 11-Sep-18 | Disclosure | PIA required | PIA complete | None | N/A | N/A | N/A | N/A | N/A |
| 96 | Indigenous Data Partner (Survey Data) | 17-Aug-18 | TBD. Requires update to variables; awaiting input from CPLO. | Data Holding | PIA required | Sign-off pending | 1) The terms of the consent form(s) do not allow for the transfer and linkage of Survey Data to ICES. There is a risk of unauthorized collection by ICES. | Pending | 1) Please see above options under Section D (Privacy Analysis). Please note: The Indigenous Data Partner has agreed to Option B and is in the process of updating consent with their Service Provider for the collection of Survey Data with direct personal identifiers on a moving forward basis. Strategic Partnerships will follow-up with the Indigenous Data Partner to provide a copy of the updated consent form for PLO's review. | N/A | N/A | N/A |
| | | | | | | | 2) The contracts between the Indigenous Data Partner and their Service Provider is not definitively clear that the Indigenous Data Partner can disclose Survey Data to ICES. The documentation provided by the Indigenous Data | Pending | 2) Option 1: Enter into a tri-party DSA which will clarify the rights and obligations between all three parties. Option 2: ICES and the Indigenous Data Partner will enter into a two-party DSA, which includes sufficient contractual language to shield ICES from liability in the event of an alleged breach by the disclosing party. | | | |

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| | | | | | | | <p>Partner may also be incomplete. There is a risk that a disclosure by the Service Provider to ICES would constitute a breach of contract by the Service Provider against the Indigenous Data Partner and would be an unauthorized collection by ICES.</p> | | <p>The Indigenous Data Partner and their Service Provider will also provide to ICES a LOA confirming that: The Service Provider is a service provider acting on behalf of the Indigenous Data Partner to collect and disclose Survey Data.</p> <p>Please see above Section D (Privacy Analysis).</p> | | | |
| | | | | | | | <p>3) According to the Indigenous Data Partner, the Survey Data without direct personal identifiers is considered de-identified. The collection of such data will contain indirect personal identifiers which may reasonably re-identify an individual. The reputational risk is that the data is not de-identified according to</p> | Pending | <p>3) Please see above options under Section D (Privacy Analysis).</p> | | | |

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| | | | | | | | ICES standards. There is also a risk of unauthorized collection. | | | | | |
| | | | | | | | 4) The proposed handling requirements have not been adequately described if ICES were to collect and hold the Survey Data without direct personal identifiers. There is a risk that the proposed handling requirements are not yet supported by ICES policies and procedures (e.g., Creating Coded Data at ICES Procedures) | Pending | 4) Develop ICES policies and procedures to enable the proposed handling requirements. | | | |
| 97 | Rheumatology EMR Database | 31-Aug-18 | 6-Mar-19 | Data Holding | PIA required | PIA complete | None | N/A | 1) The language on coding and linkage in ICES' standard DSA template must be customized to reflect the unique de-sensitization measures, and limitations, above. The following is suggested language. | Closed | 1) Recommended language was incorporated into draft DSA. | 30-Jul-19 |

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| | | | | | | | | | <p>ICES will take reasonable steps to de-sensitize the PHI such as:</p> <p>(a) Replacing health card numbers with a unique ICES anonymous identifier (ICES Identifier) or code and other identifying numbers with a 98code.</p> <p>(b) Where health card numbers are not provided, matching the PHI to information in other databases for the purposes of assigning the correct ICES Identifier; then</p> <p>(c) Removing or replacing with a code any remaining information that directly identifies an individual (Direct Personal Identifiers).</p> <p>Notwithstanding [Article X], Direct Personal Identifiers embedded in multimedia files including but not limited to medical images will not be replaced or encoded, and will only be accessed by ICES Data Covenantors for the purposes described in [Article X] or ICES employees designated to abstract relevant PHI (ICES Abstractors).</p> | | | |

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| | | | | | | | | | 2) ICES' Strategic Partnerships believes it is important to explicitly state in the DSA that ICES projects require review and approval of ICES' Privacy & Legal Office, to provide physicians greater assurance that access to the data will be administered in a controlled manner. | Closed | 2) DSA made this project review and approval explicit. | 30-Jul-19 |
| | | | | | | | | | 3) The DSA must be clear that not only ICES Data Covenantors but also ICES Abstractors will be permitted access to PHI containing Direct Personal Identifiers, and the latter group only for the purposes of abstracting relevant PHI. | Closed | 3) DSA made clear the special access permissions for these two roles. | 30-Jul-19 |
| | | | | | | | | | 4) Where data resides with an ASP clinic, the DSA must state in the Transfer Schedule that QHR Technologies is acting on behalf of the physicians to prepare and provide a data extraction to ICES. | Closed | 4) DSA made clear the transfer relationship. | 30-Jul-19 |
| | | | | | | | | | 5) The DSA must reflect all transfer methods as options because the most appropriate method to be used will vary and not be determined until after the DSA is signed. | Closed | 5) DSA included transfer options. | 30-Jul-19 |
| | | | | | | | | | 6) Prior to the commencement of consultant's work with ICES, ICES must enter into a service provider agreement with the | Open | 6) N/A | 1-Jan-20 |

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| | | | | | | | | | Department of Family and Community Medicine for consultant's support or directly with consultant acting as an independent contractor. If consultant will be serving only a minimal role, he will be required to sign an ICES NDA rather than a service provider agreement. Once the parameters of consultant's role are determined, DQIM must consult ICES' Privacy & Legal Office to put in place the appropriate contract and advise on whether consultant must receive privacy and security training. | | | |
| 98 | CCO Disclosure - Prostate cancer – Multi-program quality improvement initiative ("MPQII") | 2-Oct-18 | 5-Oct-18 | Disclosure | PIA required | PIA complete | None | N/A | None | N/A | N/A | N/A |
| 99 | Ontario Marginalization Index (ONMARG) | 5-Oct-18 | 12-Oct-18 | Data Holding | PIA required | PIA complete | None | N/A | None | N/A | N/A | N/A |
| 100 | Coroner's Data Return (2018) | 28-Nov-18 | Pending reply from change owner | Disclosure | PIA required | Sign-off pending | None | N/A | None | N/A | N/A | N/A |
| 101 | ORNGE | 3-Jan-19 | 9-Jan-19 | Data Holding | PIA required | PIA complete | None | N/A | None | N/A | N/A | N/A |
| 102 | TargetKids! | 6-Dec-18 | 9-Jan-19 | Data Holding | PIA required | PIA complete | None | N/A | None | N/A | N/A | N/A |

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| 103 | Vector Staff as Service Provider for DQIM | 17-Jan-19 | 17-Jan-19 | Service Provider | PIA required | PIA complete | None | N/A | None | N/A | N/A | N/A |
| 104 | New born Screening Ontario (NSO) Amendment #2 | 21-Jan-19 | 21-Feb-19 | Data Holding | PIA required | PIA complete | None | N/A | None | N/A | N/A | N/A |
| 105 | Public Health Ontario (PHO) | 29-Jan-19 | N/A | Data Holding | PIA not required | Withdrawn | None | N/A | PIA not required. Request withdrawn. There is no data holding, information system, technology or program at issue | N/A | N/A | N/A |
| 106 | Office of the Chief Coroner (OCC) - DDARD | 9-Feb-19 | 25-Oct-19 | Data Holding | PIA required | PIA complete | None | N/A | None | N/A | N/A | N/A |
| 107 | CorHealth Amendment #4 (3398D) - add STS | 11-Feb-19 | 6-May-19 | Data Holding | PIA required | PIA complete | None | N/A | None | N/A | N/A | N/A |
| 108 | HSSO (formerly OACCAC) Amendment #4 | 15-Feb-19 | 5-Mar-19 | Data Holding | PIA required | PIA complete | None | N/A | None | N/A | N/A | N/A |

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| 109 | HealthLinks-KHSC | 6-Feb-19 | 12-Aug-19 | Data Holding | PIA required | PIA complete | 1) Section 45(2) of PHIPA prohibits the collection of "notes of personal health information about an individual that are recorded by a health information custodian and that document the contents of conversations during a private counselling session or a group, joint or family counselling session". This type of information may be captured during data extraction and transfer. | N/A | 1) ICES to consider whether to adopt a broad or narrow interpretation of this provision, and develop policy to reflect this decision making. Example Broad interpretation: Any recording, by any means, of any information documenting the contents of conversations taking place during any counselling session, between any HIC and any patient, including formulaic data entry. Example Narrow interpretation: Transcript-like recordings, by any means, documenting the contents of conversations between a HIC and the patient, which is subject to legal privilege due to the nature of the relationship between the patient and HIC (a therapeutic counselling relationship developed for the purpose of the provision of mental health treatment). | Closed | 1) Mitigated. No free-text fields will be collected. | N/A |

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| | | | | | | | 2) Pre-approval will be managed by Strategic Partnerships who will accept and manage a compliance risk relating to a contractual and legal duty. Strategic Partnerships will withhold approval for any projects falling outside the scope of the HealthLinks Purpose. | N/A | 2) Once #1 above is complete, ICES to adopt procedures and modifications to existing procedures and forms to implement the decisions made. A procedure for seeking and obtaining pre-approval from Strategic Partnerships for scientists, as well as a mechanism for Strategic Partnerships to track this process and the due diligence associated with it, will require development. A procedure for coordinating between the Privacy team and Strategic Partnerships will also need to be developed. The procedures described above must be posted on the ICES Data Holdings Obligations Page. | Open | N/A | N/A |
| 111 | TGLN - Variable List Update | 7-Mar-19 | Awaiting additional information from chance owner | Data Holding | PIA required | Sign-off pending | None | N/A | None | N/A | N/A | N/A |
| 112 | Nutrition Canada National Survey (NCNS) | 12-Mar-19 | 11-Jun-19 | Data Holding | PIA required | PIA complete | None | N/A | 1) Include appropriate representations, warranties and indemnities from the data source in the data sharing agreement. | Closed | Language satisfactorily added to executed DSA. | 19-Jun-19 |

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| 113 | Ontario Health Study (OHS) DSA Amendment #2 | 1-Mar-19 | 26-Mar-19 | Data Holding | PIA required | PIA complete | None | N/A | None | N/A | N/A | N/A |
| 114 | OCR (CUD to GUD) | 18-Mar-19 | 18-Mar-19 | Data Holding | PIA required | PIA complete | None | N/A | None | N/A | N/A | N/A |
| 115 | PRONTO - case list disclosure to OICR | 8-Mar-19 | TBD. Awaiting information from change owner. | Disclosure | PIA required | PLO team review | 1) There is currently no policy or procedure which details unique mechanisms specific to disclosure to prescribed persons or prescribed entities, if any exist. | Open | 1) A policy and/or procedure statement describing the parameters, processes, considerations required to give effect to the disclosures permitted under Section 3(b)(5)(a) of ICES Privacy Policy should be developed. | Open | N/A | TBD |
| | | | | | | | 2) The CIHI DSA does not permit disclosure to prescribed persons under section 18(4) of O.Reg 329/04. | Open | 2) The data sourced from CIHI must be excluded or, ICES must seek written authorization in a manner consistent with the DSA requirements set out under section 5.13 and 9.1.1. The CIHI DSA is also silent with respect to waiver, and an amendment should be sought to formalize the written agreement. | Open | N/A | TBD |

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| | | | | | | | 3) DSA 3300 does not permit onward disclosure by ICES. | Open | 3) DSA 3300 requires amendment to enable the proposed onward disclosure. | Open | N/A | TBD |
| 116 | HSSO (formerly OACCAC) Amendment #5 | 15-Mar-19 | 28-Mar-19 | Data Holding | PIA required | PIA complete | None | N/A | None | N/A | N/A | N/A |
| 117 | HSSO (formerly OACCAC) - ongoing updates | 11-Apr-19 | Awaiting additional information from Change Owner | Data Holding | PIA required | PIA complete | None | N/A | None | N/A | N/A | N/A |
| 118 | BORN - 2019 Disclosure Request | 11-Apr-19 | Awaiting additional information from Change Owner | Disclosure | PIA required | Sign-off pending | None | N/A | None | N/A | N/A | N/A |
| 119 | HQO - Crosswalk Disclosure | 24-Apr-19 | 25-Apr-19 | Disclosure | PIA required | PIA complete | None | N/A | None | N/A | N/A | N/A |
| 120 | OHTN - Variables, Costs, Transfer Contact Update | 1-May-19 | 3-Jun-19 | Data Holding | PIA required | PIA complete | None | N/A | None | N/A | N/A | N/A |
| 121 | CorHealth - Disclosure & ICES as Electronic Service Provider | 10-Jul-19 | 7-Aug-19 | Business Process | PIA required | PIA complete | 7) ICES will be at once a data recipient, a data provider and an | Closed | 1) CIHI DSA must be amended to permit ICES to disclose to a prescribed registry for 39(1)(c) purposes. | Closed | 1) CIHI DSA was amended accordingly. | Feb-20 |

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| | | | | | | | electronic service provider, which creates complexity in terms of the different processes, and number of staff from different departments, required to support this arrangement. It is likely, for example, that DAS and R&A, which usually operate more or less separately, may share overall responsibility. This complexity may create operational confusion and blind spots. | | 2) The new agreement with CorHealth, discussed below, must make explicit that ICES will disclose CorHealth's registry data back to CorHealth for 39(1)(c) purposes. | Closed | Disclosure purpose was explicitly identified in DSA. | 19-Feb-20 |
| | | | | | | | | | 3) ICES should ask IMS Brogan to confirm that the license permits use of drug information for ICES' provision for services to CorHealth. | Closed | ICES struck a new license agreement with IMS Brogan to clearly permit use for services provision. | Feb-20 |
| | | | | | | | | | 4) The IPC Manual sets out minimum content requirements for Data Sharing Agreements and third party service provider agreements. ICES must ensure that the agreement between CorHealth and ICES meets the minimum requirements relevant to both subject areas to enable the proposed activity. See Appendix 1 for the relevant content requirements with respect to ICES' role as an electronic service provider. Under the new agreement, ICES will be designated an agent of CorHealth for the purpose of the retention of the custom datasets. | Closed | DSA drafted to satisfy IPC Manual minimum content requirements. | 19-Feb-20 |
| | | | | | | | | | 5) The Data Sharing Agreement must stipulate that only Summary Data are permitted to be offloaded from IDAVE and this is to be only with assistance from ICES. | Closed | DSA incorporated the specified stipulation. | 19-Feb-20 |

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| | | | | | | | | | 6) IDAVE accounts will be created and provided to CorHealth upon request. The Data Sharing Agreement must stipulate that CorHealth shall not request, enable, facilitate or direct IDAVE accounts for any person who is not an agent of CorHealth. | Closed | DSA incorporated the specified stipulation. | 19-Feb-20 |
| | | | | | | | | | 7) The roles and responsibilities of ICES staff involved in carrying out ICES' roles as electronic service provider and data provider to CorHealth should be clearly defined in a procedure. (The PLO may refer to this procedure in setting out core requirements in ICES policy – most likely the forthcoming Disclosure Policy – with respect to disclosures to prescribed entities and prescribed registries.) | Closed | A new procedure was developed and implemented. | Mar-20 |

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| | | | | | | | | | 8) CorHealth has confirmed that they have entered into a Data Privacy Agreement for Prescribed Registries with the MOHLTC and is subject to certain obligations set out in the agreement. CorHealth has stated that they are obligated to provide copies of reports to MOHLTC at least 30 days prior to publication. The Data Sharing Agreement must acknowledge this and that nothing in the agreement will prevent CorHealth from carrying out its obligations to MOHLTC pursuant to their agreement. | Closed | DSA addressed reporting obligations to MOHLTC. | 19-Feb-20 |
| 122 | CorHealth - STS Part 2 | 27-May-19 | 2019-May-28 | Data Holding | PIA required | PIA complete | None | N/A | None | N/A | N/A | N/A |
| 123 | FOREVER Cohort - Amendment | 30-Jun-19 | TBD. Awaiting information from change owner. | Data Holding | PIA required | In progress | None | N/A | None | N/A | N/A | N/A |
| 124 | Electronic Medical Records – Primary Care | 19-Jul-19 | TBD | Business Process | PIA required | In progress | N/A | N/A | N/A | N/A | N/A | N/A |
| 125 | Ontario Brain Institute-ICES Central Crosswalk | 11-Jul-19 | 16-Jan-2020 | Technology | PIA required | PIA complete | None | N/A | None | N/A | N/A | N/A |

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| 126 | POPACG - ICES Derived Data Holding | 3-Aug-19 | TBD | Data Holding | PIA required | In progress | N/A | N/A | N/A | N/A | N/A | N/A |
| 127 | Geographic Boundary Data | 19-Aug-19 | 19-Oct-19 | Data Holding | PIA required | PIA complete | 1) Compliance with certain obligations. | Addressed. | 1) Obligations relating to the use of these files must be tracked and accessible to ICES agents and third party researchers. Implementation must be adequately mandated. | Closed. | 1) Obligations related to the use of these files were identified and posted for availability to third party researchers. | 30-Oct-19 |
| | | | | | | | 2) Potential future licensing restrictions. | Addressed. | 2) Data is subject to a uniform licence. DQIM must be careful to confirm that no additional licensing restrictions apply to any future downloads. | Closed. | 2) DQIM was made aware that data is subject to a uniform license and also instructed to take caution to confirm that no additional licensing restrictions apply to any future downloads. | 11-Oct-19 |
| 128 | HealthLinks Amendment | 18-Sep-19 | TBD | Data Holding | PIA required | In progress | N/A | N/A | N/A | N/A | N/A | N/A |
| 129 | InterRAI Palliative Care - HSSO | 23-Sep-19 | TBD | Data Holding | PIA required | In progress | N/A | N/A | N/A | N/A | N/A | N/A |
| 130 | Joinpoint Callable Version | 24-Sep-19 | TBD | Technology | PIA required | In progress | N/A | N/A | N/A | N/A | N/A | N/A |

| # | Title | Open Date | PIA Completion Date | PIA Type | Assessment Determination | PIA Status | Risks Identified | Risk Status | Recommendations | Recommendation Status | Manner of Implementing Recommendation | Date Recommendation Was or Is Expected to be Implemented |
|-----|--|-----------|---------------------|------------|--------------------------|--------------|------------------|-------------|---|-----------------------|--|--|
| 131 | Research Electronic Data Capture & Primary Data Collection Procedure | 8-Oct-19 | 10-Dec-2019 | Technology | PIA required | PIA complete | None | N/A | 1) Develop and make available boilerplate language that describes the process of collecting data through REDCap and linkage of data at ICES, for inclusion by project teams in REB applications. Data retention timeframes should also be included in the language, taking into account that timeframes set out in REB applications must correspond to those set out in associated DSAs and should also mirror ICES' Record Retention Schedule. Boilerplate language will ensure accuracy and avoid misrepresentations in REB applications. | Closed. | 1) Boiler plate language was developed. | 15-Jan-2020 |
| | | | | | | | | | 2) The Project PIA should be amended to capture the following: "Case List Transfer Required: Y/N. If yes, specify variables:_____. Transfer method (specify):_____" | Closed | 2) Project PIA was updated. | 10-Jan-2020 |
| | | | | | | | | | 3) Update case list transfer procedure to explicitly describe sets for Excel file encryption. | Closed | 3) Case list transfer procedure was updated. | 10-Jan-2020 |
| | | | | | | | | | 4) Review ICES Abstractor Confidentiality Agreement to ensure provisions are not inconsistent with the PDC Procedure and use of REDCap. Insert a provision to prohibit | Partially closed | 4) ICES Abstractor Confidentiality Agreement was reviewed and determined to not be inconsistent with the | Target date: Nov-2020 |

| # | Title | Open Date | PIA Completion Date | PIA Type | Assessment Determination | PIA Status | Risks Identified | Risk Status | Recommendations | Recommendation Status | Manner of Implementing Recommendation | Date Recommendation Was or Is Expected to be Implemented |
|---|-------|-----------|---------------------|----------|--------------------------|------------|------------------|-------------|--|-----------------------|--|--|
| | | | | | | | | | storage of data on mobile devices. Adjust requirements to require return of items either in person or via courier. | | PDC Procedure and use of use of REDCap. Changes yet to be made include insertion of a provision to prohibit storage of data on mobile devices and to requirement to return items in person or via courier. | |

Appendix E – Privacy Audit Program

| Privacy audit | Description | Date completed | Recommendation(s) | Date recommendation(s) was or is proposed to be addressed | Action(s) taken or proposed to be taken to address recommendation(s) |
|--------------------------|---|----------------|--|---|---|
| A. Audit of agent access | An audit was conducted on particular aspects of agent access to the Research & Analytic Environment (RAE) where ICES data reside for use in analysis. The audit period covered Jul 2017 – Sep 2018. | Feb 2019 | <ol style="list-style-type: none"> 1. Deploy privacy training on an annual basis to meet IPC requirement to do so. 2. Enhance privacy awareness training to provide education specifically on accessing the RAE. 3. Set up working group to address role-based on-the-job training regarding RAE access. | <ol style="list-style-type: none"> 1. Aug 2019 2. Aug 2019 3. Proposed: Dec 2020 | <ol style="list-style-type: none"> 1. Deployed annual e-training. 2. Annual e-training addresses policies and procedures for gaining access to the RAE. 3. A working group will be established to address role-based training. |
| B. Audit of agent access | An audit was conducted on particular aspects of agent access to the Research & Analytic Environment (RAE) where ICES data reside for use in analysis. The audit period covered Jul 2017 – Sep 2018. | Feb 2019 | <ol style="list-style-type: none"> 1. Review Access to ICES Data Policy, add access content to summary data and de-identified data or refer to relevant procedures. 2. Add “need to know” principle and “role-based” principle to Protection to ICES Data Policy. 3. Remove confusing data classification from security policy and procedures. 4. Update the content relating to ICES Data Covenantor when reviewing the Access to ICES Data Policy. | <ol style="list-style-type: none"> 1. Proposed: 31 Oct 2020 2. Proposed: 31 Oct 2020 3. Feb 2019 4. Proposed: 31 Oct 2020 | <ol style="list-style-type: none"> 1. Review Access to ICES Data policy, add the access content to summary data and de-identified data or refer to relevant procedures. 2. “Need to know” principle and “role-based” principle will be added to Protection to ICES Data Policy. 3. Removed data classification from security policy and procedures. 4. The content relating to ICES Data Covenantor will be updated when reviewing the Access to ICES Data Policy. |
| C. Audit of agent access | An audit was conducted on particular aspects of agent access to the Research & Analytic Environment (RAE) where ICES data reside for use in analysis. The audit period covered Jul 2017 – Sep 2018. | Feb 2019 | <ol style="list-style-type: none"> 1. Compare RAE SAS Active Directory list with Corporate Active Directory list to identify redundant RAE SAS user accounts. 2. Review the annual project access verification process. | <ol style="list-style-type: none"> 1. Feb 2019 2. Proposed: 30 Sep 2020 | <ol style="list-style-type: none"> 1. Compared RAE SAS Active Directory list with Corporate Active Directory list and identified redundant RAE SAS user accounts. 2. The annual project access verification process will be reviewed, including the following: <ul style="list-style-type: none"> • Provide a summary report displaying current RAE user’s access (user name, title, research program, project trim number, PIA, access to folder etc.). • Suggest that DQIM, R&A and DAS develop a user-friendly access control list. • Optimize the RAE access verification template and review process to enable manager has visibility of the team’s access to RAE. |

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| | | | | | <ul style="list-style-type: none"> • Involve Privacy & Compliance Manager in the process to ensure necessary documents are included. • Secure IT and DQIM's involvement to ensure the revised process could also satisfy the need of minimizing storage space and other operation needs. • Reflect the updated procedure in relevant policy and procedures. |
| D. Audit of agent access | An audit was conducted on particular aspects of agent access to the Research & Analytic Environment (RAE) where ICES data reside for use in analysis. The audit period covered Jul 2017 – Sep 2018. | Feb 2019 | 1. In the RAE SAS environment, audit library logs are maintained to record comprehensive access transactions to RAE. However, not all RAE users are aware of the existence of logs in RAE SAS environment. ICES must ensure that all users are aware of access logs. | 1. Feb 2019 | 1. Time will be taken during regular departmental meetings to alert RAE users to the existence of the RAE audit library and explain the importance of the “need-to-know” principle and “role-based access”. |
| E. Audit of agent access | An audit was conducted on particular aspects of agent access to the Research & Analytic Environment (RAE) where ICES data reside for use in analysis. The audit period covered Jul 2017 – Sep 2018. | Feb 2019 | 1. Set up a quarterly review process on RAE access log. | 1. Work is ongoing. Proposed: Dec 2020 | 1. Define the scope and use cases of the quarterly review, including the following: <ul style="list-style-type: none"> • Ensure the quarterly review is conducted on an ongoing basis and includes targeted (reactive) and random (proactive) auditing. • Set up a specific RAE log procedure to set out the types of auditing and monitoring that must be conducted using the logs; the procedure for each type of auditing and monitoring; the agent responsible for each type of auditing and monitoring; the frequency with which each type of auditing and monitoring must be conducted; the criteria to be used for each type of auditing and monitoring; the procedure to be followed for reviewing and addressing the findings of the auditing and monitoring; and the procedure to be followed in the event that an actual or suspected privacy breach is identified. • Add the above-mentioned procedure in the System Control and Audit Log Policy. |
| F. Audit of agent access | An audit was conducted on particular aspects of agent access to the Research & Analytic Environment (RAE) where ICES data reside for use in analysis. The audit period covered Jul 2017 – Sep 2018. | Feb 2019 | 1. Access to RAE accounts for full-time employees should be set to expire automatically; the timeframe for expiry should coincide with annual confidentiality agreement renewal; | 1. Work is ongoing. Proposed: Dec 2020 | 1. Access to RAE accounts for full-time employees will be set to expire automatically; the timeframe for expiry will (most likely) be set to coincide with annual confidentiality agreement renewal; and a list of |

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| | | | and a list of employees who fail to renew should be sent to ICES' IT to disable their account. | | employees who fail to renew will be sent to ICES' IT to disable their account. |
| G. Audit of agent access | An audit was conducted on particular aspects of agent access to the Research & Analytic Environment (RAE) where ICES data reside for use in analysis. The audit period covered Jul 2017 – Sep 2018. | Feb 2019 | <ol style="list-style-type: none"> 1. The ICES project transfer procedure contains a gap in that access to the original project data folder is required to be provided to complete the transfer but removal of access thereafter is not monitored. In regular project team meetings time should be spent raising awareness of redundant access and removing access in a timely way. 2. In the onboarding-offboarding system, add a feature to centrally record role changes: promotion, department change, transfer from one site to another site, and transfer from one project to another project. 3. In the project verification process, add a checkbox to ensure access to the original project folder is reviewed for agents who have changed roles or transferred from one project to another project. | <ol style="list-style-type: none"> 1. Dec 2019 2. Work is ongoing. Proposed: Dec 2020 3. Work is ongoing. Proposed: 30 Sep 2020 | <ol style="list-style-type: none"> 1. In regular project team meetings time was spent raising awareness of redundant access and removing access in a timely way. 2. In the onboarding-offboarding system, a feature will be added to centrally record role changes: promotion, department change, transfer from one site to another site, and transfer from one project to another project. 3. In the project verification process, a checkbox will be added to ensure access to the original project folder is reviewed for agents who have changed roles or transferred from one project to another project. |
| H. Audit of agent access | ICES agents are provided access to data based on the projects to which they are assigned. An audit was conducted to verify continued need for access to the data specific to each project. | Jul 2018 | <ol style="list-style-type: none"> 1. Remove access for any agent who confirms access is no longer required. | <ol style="list-style-type: none"> 1. 30 Sep 2020. | <ol style="list-style-type: none"> 1. Microsoft Identify Management (MIM) was deployed in Dec 2019 and agents have been able to remove themselves from projects since that time. Internal stakeholders have met to initiate a new annual project membership verification process using MIM and the projected completion date as 30 Sep 2020. |
| I. Other privacy audit | The ICES data repository was scanned to detect presence of sensitive variables and these were checked against the type of access permitted to each file. | Apr 2019 | None | n/a | n/a |
| J. Other privacy audit | The entire ICES data repository was scanned to detect presence of free-text fields. Fields were flagged if they were >50 characters long, had at least one value >30 characters long, and contained >50 unique values. | Apr 2019 | <ol style="list-style-type: none"> 1. Remove or mask any sensitive variables within the free-text fields. 2. Update Creating Coded Data Procedure to include more specific instructions for dealing with free-text fields. | <ol style="list-style-type: none"> 1. Apr 2019 2. Aug 2019 3. Work is ongoing. Mar 2021 | <ol style="list-style-type: none"> 1. Sensitive variables were removed or masked and the revised data was reposted for use. 2. Creating Coded Data Procedure was updated. 3. Assess data with free-text fields to develop new logic and tool for better free-text detection. (A preliminary version of such a tool has been developed. Work is underway to refine models for various types of free-text data in order to |

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| | | | 3. Embed new logic in the macro to better identify potential free-text fields. | | identify the most appropriate algorithms for de-sensitization of free text data). |
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Appendix F – Privacy Breaches

| # | Breach type | Date notified | Description | Internal/external | Nature & extent | Sr. Management Notified | Containment | Containment date | Third party notice | Investigation start | Investigation close | Recommendations | Implemented |
|---|-------------|---------------|--|-------------------|--|-------------------------|---|------------------|--------------------|---------------------|---------------------|---|--|
| 1 | Policy | 1-Nov-2016 | A manuscript with summary results on MRI-based neuroanatomical predictors of dysphagia was delivered to a medical journal for consideration for publication. | Internal | The results contained small cells the exact number of which was not explicit but could be calculated. The risk of the recipient being able to use the cell to re-identify any person was very low. | 1-Nov-2016 | The journal was instructed to delete copies of the manuscript in its possession. ICES received confirmation of destruction. A revised copy with the small cells suppressed was reissued to the journal. | 1-Nov-2016 | Not required. | 1-Nov-2016 | 29-Dec-2016 | <ol style="list-style-type: none"> 1. Communicate a reminder to the principal investigator to complete a re-identification risk assessment, and as part of this, to suppress small cells prior to release of any reports. 2. ICES Research and Analysis was instructed to amend ICES faculty training to emphasize rules of re-identification risk assessments. | <ol style="list-style-type: none"> 1. A reminder was communicated to the principal investigator on 2-Nov-2016. 2. ICES Research and Analysis was instructed to amend faculty training on 2-Nov-2016. The materials now cover the rules on re-identification risk extensively with specific examples of small cell suppression. |
| 2 | Contract | 24-Nov-2016 | A government agency disclosed personal health to ICES, which ICES later discovered the agency did not have explicit permission to share. The agreements between the agency and the | External | The personal health information was disclosed to ICES in fully-identified form. A mitigating factor was that ICES desensitized the information prior to release to the investigators. | 24-Nov-2016 | The Chief Privacy & Legal Officer ordered the project team using the personal health information to suspend all work and quarantine the data and await further notice. | 28-Nov-2016 | 24-Nov-2016 | 24-Nov-2016 | 3-Mar-2017 | <ol style="list-style-type: none"> 1. The agency must secure explicit permission for the health information custodians to disclose their information to ICES. | <ol style="list-style-type: none"> 2. The agency confirmed in writing on 24-Feb-2017 that permission was obtained. |

| # | Breach type | Date notified | Description | Internal/external | Nature & extent | Sr. Management Notified | Containment | Containment date | Third party notice | Investigation start | Investigation close | Recommendations | Implemented |
|---|---------------------|---------------|--|-------------------|--|-------------------------|--|------------------|---|---------------------|---------------------|--|---|
| | | | various health information custodians appeared to prohibit disclosure. | | | | | | | | | | |
| 3 | Policy and contract | 24-Apr-2017 | A table with summary results on testicular cancer was delivered to a medical journal and posted on the journal's website to accompany the related scientific abstract. | Internal | The results contained several small cells. The exact number of cells was explicit, although the risk of someone being able to use the cell to re-identify any person was very low. | 24-Apr-2017 | The principal investigator instructed the journal to remove the table from its website immediately. ICES received confirmation the journal complied. | 22-Apr-2017 | Applicable data providers were notified of the incident on 11-May-2017. | 24-Apr-2017 | 11-May-2017 | 1. Communicate a reminder to the principal investigator to complete a re-identification risk assessment, and as part of this, to suppress small cells prior to release of any reports. | 1. A reminder was communicated to the principal investigator on 21-Apr-2017. |
| 4 | Policy | 29-May-2017 | A hospital sent a table to an ICES investigator that contained personal health information that was not meant to be sent. | External | The table contained fully-identified data. It was sent to and received by a single recipient at ICES. | 29-May-2017 | The recipient at ICES was instructed to delete the table and inform the sender of the incident. The recipient confirmed deletion. | 29-May-2017 | The sender was notified on 29-May-2017. | 29-May-2017 | 29-May-2017 | None | N/A |
| 5 | Policy and contract | 27-Jun-2017 | ICES provided aggregate tables to a government agency who in turn provided indicators calculated using those tables to physicians who consented to | Internal | The indicators containing small cells related were displayed in 58 of 999 physician practice profile reports. The indicators concerned the number of a | 27-Jun-2017 | The online portal through which physicians accessed their reports was temporarily decommissioned and steps were taken to prepare and | 27-Jun-2017 | Notice the data to provider was not required. | 27-Jun-2017 | 3-Aug-2017 | 1. ICES must develop a process for vetting the aggregate tables for small cell suppression before releasing to the | 1. ICES developed a process and delegated responsibility to an ICES scientist for vetting the aggregate |

| # | Breach type | Date notified | Description | Internal/external | Nature & extent | Sr. Management Notified | Containment | Containment date | Third party notice | Investigation start | Investigation close | Recommendations | Implemented |
|---|-------------|---------------|--|-------------------|---|-------------------------|---|------------------|--|---------------------|---------------------|---|--|
| | | | receive their own individual practice profiles. Certain of practice profile reports contained small cells. | | physician's patients who did not receive cholesterol medication. The small cells were assessed and the risk of re-identification was determined to be very low. | | release new reports with the small cells adequately suppressed. Physicians who had accessed their reports were instructed to destroy any copies in their possession. (Physicians were not asked to confirm destruction.) | | | | | <ol style="list-style-type: none"> government agency rather than relying on the latter to perform the assessment. Affix a caution message on the online portal prohibiting any attempt to re-identify patients. | <ol style="list-style-type: none"> reports on 7-Jul-2017. A caution message was posted to the portal on 11-Jul-2017. |
| 6 | Policy | 19-Oct-2017 | A manuscript submitted to a medical journal contained a table of results on individuals with cancer and these results contained small cells. | Internal | The small cells related to group of individuals with cancer and whether they lived in an urban or rural setting. The exact cell size was not explicit but could be calculated. The risk the small cells could be used to re-identify a person was assessed as very low. | 19-Oct-2017 | The journal was instructed to delete all copies of the manuscript in its possession and to await a revised version with the small cells suppressed. ICES received confirmation that the journal deleted copies of the manuscript. | 25-Oct-2017 | Notice to the data providers was not required. | 19-Oct-2017 | 27-Nov-2017 | <ol style="list-style-type: none"> Communicate a reminder to the principal investigator to complete a re-identification risk assessment, and as part of this, to suppress small cells prior to release of any reports. | <ol style="list-style-type: none"> A reminder was communicated to the principal investigator on 27-Nov-17. |
| 7 | Policy | 11-Jan-2018 | A manuscript with summary results related to individuals with neuromuscular | Internal | The exact cell size was not explicit but could be calculated. The risk the small | 11-Jan-2018 | The journal was instructed to delete all copies of the manuscript in its possession and | 11-Jan-2018 | Notice to the data providers was not required. | 11-Jan-2018 | 23-Jan-2018 | <ol style="list-style-type: none"> Communicate a reminder to the principal investigator to complete a re-identification | <ol style="list-style-type: none"> A reminder was communicated to the principal investigator |

| # | Breach type | Date notified | Description | Internal/external | Nature & extent | Sr. Management Notified | Containment | Containment date | Third party notice | Investigation start | Investigation close | Recommendations | Implemented |
|---|-------------|---------------|--|-------------------|---|-------------------------|--|------------------|---|---------------------|---------------------|---|---|
| | | | diseases was submitted to a medical journal and the results contained small cells. | | cells could be used to re-identify a person was assessed as very low . | | to await a revised version with the small cells suppressed. ICES received confirmation that the journal deleted copies of the manuscript. | | | | | risk assessment, and as part of this, to suppress small cells prior to release of any reports. | on 23-Jan-2018. |
| 8 | Policy | 07-Feb-2018 | An ICES Analyst involved in an ICES project, a component of which involves "cleaning" lab data received MOHLTC had sent a file to project members containing frequencies of lab tests which included a large number of free-text fields via email. Such data is not allowed to be offloaded ICES' Research and Analytic Environment (RAE). Rather, it must be viewed within ICES on the RAE. | Internal | The incident was that the free-text data was offloaded from an environment where it was required to remain at all times. The data did not leave ICES' custody. The risk was extremely low . | 9-Feb-2018 | Director of DQIM was instructed to issue a request for all affected projects members to destroy the file and confirm destruction. All project members confirmed destruction. | 22-Feb-2018 | Notice to the data provider was not required. | 07-Feb-2018 | 22-Feb-2018 | Several actions must be taken to avoid future related incidents data cleaning activities when working with free-text fields. These include: a) Bolster current DQIM protocol/guideline (top priority) b) Provide further education and training to the group of analysts working on OLIS cleaning, addressing protocol/guideline specifically c) Maintain a list of individuals who are allowed to receive summary data for each test group (e.g. have signed NDA) | All were confirmed to be implemented (May 2018) |

| # | Breach type | Date notified | Description | Internal/external | Nature & extent | Sr. Management Notified | Containment | Containment date | Third party notice | Investigation start | Investigation close | Recommendations | Implemented |
|----|-------------|---------------|--|-------------------|---|-------------------------|--|------------------|---|---------------------|---------------------|--|--|
| 9 | Policy | 15-Feb-2018 | Reports distributed to physicians with information about their practice contained small cells. | Internal | The exact values of the small cells were not explicitly identified in the reports. Small cells could only be calculated through inference based on a bar graph which in some cases displayed instances of 6 or fewer patients. The small cells reflected the percentage of a physician's patients who had received a prescription for opioids or benzodiazepines within March of 2017 either by the physician or another physician. | 15-Feb-2018 | Access to the online portal of any physicians who were suspected to have received a report containing small cells was disabled and not enabled until new reports were uploaded with the graphical error eliminated. Physicians who had accessed their reports were instructed to destroy any copies in their possession. (Physicians were not asked to confirm destruction.) | 15-Feb-2018 | Notice to the data provider was not required. | 15-Feb-2018 | 23-Feb-2018 | None | N/A |
| 10 | Policy | 16-Jul-2018 | A table included in a manuscript submitted to a medical journal contained a small cell. | Internal | One small cell was present in the table displayed in the manuscript. The exact cell size was not specified, but it could be calculated using the column totals displayed. | 16-Jul-2018 | A project team member contacted the journal to request that it destroy copies of the manuscript in its possession. The journal confirmed | 16-Jul-2018 | Notice to the data provider was not required. | 16-Jul-2018 | 18-Jul-2018 | 1. Communicate a reminder to the principal investigator to complete a re-identification risk assessment, and as part of this, to suppress small cells prior to | 1. A reminder was communicated to the principal investigator on 18-Jul-2018. |

| # | Breach type | Date notified | Description | Internal/external | Nature & extent | Sr. Management Notified | Containment | Containment date | Third party notice | Investigation start | Investigation close | Recommendations | Implemented |
|----|---------------------|---------------|---|-------------------|--|-------------------------|--|--|--------------------|---------------------|---------------------|-------------------------|-------------|
| | | | | | The small cell reflected receipt of home care palliative services in patients also receiving dialysis in their last year of life. | | destruction of the manuscript. | | | | | release of any reports. | |
| 11 | Policy and Contract | 23-Aug-2018 | A draft manuscript circulated among project team members, in the context of a third party research project, was discovered to contain a small cell. | External | The third party researcher copied data from a server in violation of an agreement with ICES prohibiting removal of data from ICES systems without permission, thus permitting generation of a cell with fewer than 6 observations. The small cell related to hospital mortality. The cell was assessed and determined to pose only a very low risk of re-identification. | 23-Aug-2018 | A senior ICES scientist reminded the third party researcher of his obligation to not physically copy any data displayed by ICES systems. | Prior to notification to the Privacy & Legal Office. | Not required. | 23-Aug-2018 | 29-Aug-2018 | None | N/A |
| 12 | Policy | 28-Mar-2018 | A table containing small cells was sent to a research coordinator who | Internal | The cell values were not explicit but could be calculated. The small cells were | 28-Mar-2018 | The researcher coordinator was instructed to, and did, delete the email | 28-Mar-2018 | Not required. | 28-Mar-2018 | 28-Mar-2018 | None | N/A |

| # | Breach type | Date notified | Description | Internal/external | Nature & extent | Sr. Management Notified | Containment | Containment date | Third party notice | Investigation start | Investigation close | Recommendations | Implemented |
|---|-------------|---------------|---|-------------------|--|-------------------------|-----------------------|------------------|--------------------|---------------------|---------------------|-----------------|-------------|
| | | | was not a project team member and thus not supposed to receive the table. | | determined to pose only a low risk of re-identification. | | containing the table. | | | | | | |

Appendix G – Security Policies & Procedures

| Name | Review Date(s) | Amendment/ New Policy Required | Amendment/New Policy Description | Agent Communication Date | Nature of Agent Communication | Public Communication Materials Amended | Description of Amendments to Communications Materials |
|---|----------------|--------------------------------------|---|--------------------------------|----------------------------------|---|--|
| Acceptable Use Policy | May-19 | Amendment | Referred to Remote Access Policy; added cloud software responsibilities; general format revisions | Oct-19 | Intranet posting | No | n/a |
| | Oct-19 | Amendment | Updated titles and departments; added <i>Coroners Act</i> addendum | Oct-19 | Intranet posting | No | n/a |
| Data Backup Policy | Oct-19 | Amendment | Updated roles to reflect organizational changes; added <i>Coroners Act</i> addendum | Oct-19 | Intranet posting | No | n/a |
| Destruction of ICES Data SOP | Oct-19 | Amendment | Updated titles and departments | n/a | n/a | No | n/a |
| ICES Data Management Policy | Oct-19 | Amendment | Moved to new template; updated roles and departments; added <i>Coroners Act</i> addendum | Oct-19 | Intranet posting | No | n/a |
| ICES Data Management Standard | Oct-19 | No Amendment | None | n/a | n/a | No | n/a |
| Security Incident Log & Report Form Workbook (formerly ICES Security Incident Management SOP) | Oct-19 | Amendment | Updated titles | n/a | n/a | No | n/a |
| Information Media Destruction SOP | Oct-19 | No Amendment | None | n/a | n/a | No | n/a |
| Information System Acquisition, Development | May-19 | Amendment | Updated to new template | n/a | n/a | No | n/a |

| Name | Review Date(s) | Amendment/ New Policy Required | Amendment/New Policy Description | Agent Communication Date | Nature of Agent Communication | Public Communication Materials Amended | Description of Amendments to Communications Materials |
|---|----------------|--------------------------------------|--|--------------------------------|----------------------------------|---|--|
| and Maintenance Policy | Jun-19 | Amendment | Updated roles and designations; changed DTS reference to encompass DQIM, IT and Security | Jun-19 | Intranet posting | No | n/a |
| | Oct-19 | Amendment | Added <i>Coroners Act</i> addendum | Oct-19 | Intranet posting | No | n/a |
| Mobile Devices Policy | Oct-19 | Amendment | Updated to new template; updated titles and departments; added <i>Coroners Act</i> addendum | Oct-19 | Intranet posting | No | n/a |
| Passw ord Policy | May-19 | Amendment | Updated to new template | Jun-19 | Intranet posting | No | n/a |
| | Jun-19 | Amendment | Updated roles and designations; added "service accounts" to the user account definition; update NIST reference link | Jun-19 | Intranet posting | No | n/a |
| | Oct-19 | Amendment | Added <i>Coroners Act</i> addendum | Oct-19 | Intranet posting | No | n/a |
| Patch Management Policy | Jun-19 | Amendment | Updated roles and departments; minor update on the purpose and scope; included IoT devices | Jun-19 | Intranet posting | No | n/a |
| | Oct-19 | Amendment | Added <i>Coroners Act</i> addendum | Oct-19 | Intranet posting | No | n/a |
| Physical Security Policy | Oct-19 | Amendment | Updated roles; added more procedural details about each physical security system; added ICES Central site map as an appendix; added <i>Coroners Act</i> addendum | Oct-19 | Intranet posting | No | n/a |
| Remote Access Policy | Mar-19 | Amendment | Policy updated to reflect recent changes in remote access methods across ICES network | Mar-19 | Intranet posting | No | n/a |
| | Oct-19 | Amendment | Added <i>Coroners Act</i> addendum | Oct-19 | Intranet posting | No | n/a |
| Case List Request & Distribution Procedure | Sep-17 | Amendment | Update to explicitly confirm case lists are encrypted when sent by email | Sep-19 | Intranet posting | No | n/a |
| | Feb-18 | Amendment | Update to include procedures in Axway transfer | Feb-18 | Intranet posting | No | n/a |
| | Jun-19 | Amendment | Update to include REDCap PDC tool procedures | Jun-19 | Intranet posting | No | n/a |
| | Oct-19 | Amendment | Added <i>Coroners Act</i> addendum | Oct-19 | Intranet posting | No | n/a |
| Managing Paper Chart Documents Procedure | Oct-19 | Amendment | Updated to new template; added <i>Coroners Act</i> addendum | Oct-19 | Intranet posting | No | n/a |

| Name | Review Date(s) | Amendment/ New Policy Required | Amendment/New Policy Description | Agent Communication Date | Nature of Agent Communication | Public Communication Materials Amended | Description of Amendments to Communications Materials |
|--|----------------|--------------------------------|--|--------------------------|-------------------------------|--|---|
| Security Audit & Monitoring Policy (formerly Security Audit Policy) | May-19 | Decommissioned | Relevant information transferred to Internal Audit Policy | May-19 | Intranet posting | No | n/a |
| | Oct-19 | No Amendment | None | n/a | n/a | No | n/a |
| Security Audit Report Form Template | Jul-19 | Amendment | Added new logo; updated title and department names | n/a | n/a | No | n/a |
| Security Awareness & Training Policy (formerly Security Training Policy) | Jun-19 | Amendment | Added to new template; updated titles and departments | Jun-19 | Intranet posting | No | n/a |
| | Oct-19 | Amendment | Added Coroners Act addendum | Oct-19 | Intranet posting | No | n/a |
| Security Framework & Governance Policy | Sep-19 | Amendment | Divided information Security program according to Cybersecurity and Physical Security | Sep-19 | Intranet posting | No | n/a |
| | Oct-19 | Amendment | Added Coroners Act addendum | Oct-19 | Intranet posting | No | n/a |
| Security Incident Management Policy | Jun-19 | Amendment | Updated to new template; updated titles and departments; added content for increased clarity | Jun-19 | Intranet posting | No | n/a |
| | Oct-19 | Amendment | Added Coroners Act addendum | Oct-19 | Intranet posting | No | n/a |
| System Control & Audit Log Policy | Jun-19 | Amendment | Moved to new template; updated roles and departments; included staff, faculty and users to the scope; Changes IT Director Responsibility to Security Manager; included cybersecurity users | Jun-19 | Intranet posting | No | n/a |
| | Oct-19 | Amendment | Added Coroners Act addendum | Oct-19 | Intranet posting | No | n/a |
| Visitors Policy | May-19 | Amendment | Updated to new template; updated titles and departments | May-19 | Intranet posting | No | n/a |

| Name | Review Date(s) | Amendment/ New Policy Required | Amendment/New Policy Description | Agent Communication Date | Nature of Agent Communication | Public Communication Materials Amended | Description of Amendments to Communications Materials |
|------|----------------|--------------------------------------|--|--------------------------------|----------------------------------|---|--|
| | Oct-19 | Amendment | Reorganized content; revised roles and point of contact for suspected security incidents; added <i>Coroners Act</i> addendum | Oct-19 | Intranet posting | No | n/a |

Appendix H – Physical Security Audits

| # | Type of Audit | Description of Audit | Date Audit Completed | Recommendation(s) | Date recommendation(s) was or is proposed to be addressed | Actions taken or proposed to be taken to address recommendation(s) |
|---|-----------------------|---|---|--|---|--|
| 1 | Physical access audit | Audit of access to ICES premises. Visitor logs were reviewed to ensure compliance with ICES' corresponding Visitors Policy. | A review of the visitor logs is completed each month. | No recommendations arose from the monthly visitor log review. For clarity, during the review s, any electronic access cards found not have been returned are de-activated immediately. | N/A | N/A |

Appendix I – Security Audit Program

| # | Type of Audit | Description of Audit | Date Audit Completed | Recommendation(s) | Date recommendation(s) was or is proposed to be addressed | Actions taken or proposed to be taken to address recommendation(s) |
|----|---|---|----------------------|--|---|---|
| 1. | Dual monitor TRA | Assess risk of deploying dual monitors across ICES networks. | 20-Mar-2017 | 1. Network banner message to be presented at time of login reminding re-identification of ICES data is prohibited. | 1. 20-Mar-2017 | 1. Network banner was applied. |
| 2. | Mobile Devices TRA | Assess risk of smart phone use within ICES premises. | 20-Mar-2017 | Recommendations have not been identified in order to avoid external threats to ICES systems. | 1. 20-Mar-2017 2. 20-Mar-2017 | Actions taken or proposed to be taken to address recommendations have not been identified in order to avoid external threats to ICES systems. |
| 3. | EMRALD to RAE Migration TRA | Assess phase 1 of the EMRALD to Research Analytics Environment Migration to determine the overall security posture. | 24-April-2017 | | 1. 13-Feb-2017 2. 13-Feb-2017 3. 13-Feb-2017 | |
| 4. | COACH Risk Calculator TRA | Assess COACH Risk Calculator application. | 6-Mar-2017 | | 1. 6-Mar-2017 | |
| 5. | Sitecore Migration TRA | Assess the Sitecore migration from version 6.6 to 7.2. | 5-May-2017 | | 1. 17-Apr-2017 2. 17-Apr-2017 3. 5-May-2017 | |
| 6. | Network Equipment TRA (a general description has been used here instead of the technology brand name) | Assess the network equipment switches as part of IT refresh project. | 5-Oct-2017 | | 1. 19-May-2017 2. 31-Jan-2018 3. 29-Jun-2017 | |

| # | Type of Audit | Description of Audit | Date Audit Completed | Recommendation(s) | Date recommendation(s) was or is proposed to be addressed | Actions taken or proposed to be taken to address recommendation(s) |
|-----|---|--|----------------------|--|---|---|
| 7. | Work From Home TRA | Assess the work from home solution which includes Citrix and user laptops. | 2017-11-06 | Recommendations have not been identified in order to avoid external threats to ICES systems. | <ol style="list-style-type: none"> 31-Aug-2017 7-Jul-2017 10-Oct-2017 10-Oct-2017 1-Nov-2017 | Actions taken or proposed to be taken to address recommendations have not been identified in order to avoid external threats to ICES systems. |
| 8. | Email Gateway TRA (a general description has been used here instead of the technology brand name) | Assess the design and implementation of the email gateway solution. | 10-May-2017 | | <ol style="list-style-type: none"> 31-Jul-2017 31-Jul-2017 31-Jul-2017 31-Jul-2017 31-Jul-2017 31-Jul-2017 31-Jul-2017 | |
| 9. | Thin-Client Management Servers TRA | Assess the thin client management solution. | 10-May-2017 | | <ol style="list-style-type: none"> 20-Jul-2017 20-Jul-2017 20-Jul-2017 20-Jul-2017 20-Jul-2017 | |
| 10. | Email Infrastructure TRA | Assess the design and implementation of the email upgrade. | 8-Mar-2017 | | <ol style="list-style-type: none"> 10-Jun-2017 29-Nov-2017 10-Jun-2017 10-Jun-2017 10-Jun-2017 | |
| 11. | Corp VDI TRA | Assess the VDI upgrade. | 09-Jan-2017 | | <ol style="list-style-type: none"> 10/06/2017 10/06/2017 10/06/2017 | |

| # | Type of Audit | Description of Audit | Date Audit Completed | Recommendation(s) | Date recommendation(s) was or is proposed to be addressed | Actions taken or proposed to be taken to address recommendation(s) |
|-----|--|--|----------------------|--|---|---|
| 12. | Data Safe Haven TRA | Assess the design and implementation of a private cloud collaboration project. | 24-Jul-2017 | Recommendations have not been identified in order to avoid external threats to ICES systems. | <ol style="list-style-type: none"> 1. 13-Sep-2017 2. 28-Jul-2017 3. 22-Nov-2017 4. TBD 5. TBD 6. 9-Oct-2017 | Actions taken or proposed to be taken to address recommendations have not been identified in order to avoid external threats to ICES systems. |
| 13. | Secure File Transfer TRA (a general description has been used here instead of the technology brand name) | Assess the upgrade and migration of the secure file transfer solution. | 11-Oct-2017 | | <ol style="list-style-type: none"> 1. 25-Oct-2017 2. 25-Oct-2017 3. 25-Oct-2017 | |
| 14. | GPU Machine TRA | Assess the GPU machine and environment. | 18-Oct-2017 | | <ol style="list-style-type: none"> 1. 12-Dec-2017 2. 18-Oct-2017 1. 18-Oct-2017 | |
| 15. | IDAVE Virtual Desktop Infrastructure (VDI) TRA | Assess the VDI upgrade. | 02-Nov-2017 | | <ol style="list-style-type: none"> 1. 03-Nov-2017 2. 03-Nov-2017 | |
| 16. | Antimalware Tool TRA (a general description has been used here instead of the technology brand name) | Assess the design and implementation of a new antimalware solution. | 27-Dec-2017 | | <ol style="list-style-type: none"> 1. 27-Dec-2018 2. 29-Jan-2018 3. 29-Jan-2018 4. 29-Jan-2018 5. 29-Jan-2018 | |
| 17. | Backup Solution TRA (a general description has been used here instead of | Assess the design and implementation of a new backup solution. | 29-Jan-2018 | | <ol style="list-style-type: none"> 1. 25-Jan-2018 2. 25-Jan-2018 3. 30-Jan-2018 4. 25-Jan-2018 1. 26-Mar-2018 | |

| # | Type of Audit | Description of Audit | Date Audit Completed | Recommendation(s) | Date recommendation(s) was or is proposed to be addressed | Actions taken or proposed to be taken to address recommendation(s) |
|-----|---|---|----------------------|--|---|---|
| | the technology brand name) | | | Recommendations have not been identified in order to avoid external threats to ICES systems. | | Actions taken or proposed to be taken to address recommendations have not been identified in order to avoid external threats to ICES systems. |
| 18. | ICES North Connectivity TRA | Assess any risks introduced for ICES North with new network connectivity solution. | 22-Feb-2018 | | <ol style="list-style-type: none"> 1. 22-Feb-2018 2. 22-Feb-2018 3. 22-Feb-2018 | |
| 19. | Research Database TRA (a general description has been used here instead of the technology brand name) | Assess the design and implementation the web application used for building and managing online surveys and databases. | 14-Feb-2018 | | <ol style="list-style-type: none"> 1. 05-Apr-2018 2. 16-Feb-2018 | |
| 20. | Record Linkage Software TRA (a general description has been used here instead of the technology brand name) | Assess the dataflow process and application environment. | 27-Apr-2018 | | <ol style="list-style-type: none"> 1. 10-Apr-2018 2. 10-Apr-2018 3. 10-Apr-2018 | |
| 21. | ICES North Satellite Site TRA | Assess network, physical and procedural threat risk assessment of newly established | 7-Apr-2018 | | <ol style="list-style-type: none"> 1. 07-Jul-2018 2. Approx. Jul-2018 3. Approx. Jul-2018 4. Approx. Jul-2018 5. 24-Dec-2018 6. 24-Dec-2018 7. 24-Dec-2018 8. 24-Dec-2018 9. 24-Dec-2018 | |

| # | Type of Audit | Description of Audit | Date Audit Completed | Recommendation(s) | Date recommendation(s) was or is proposed to be addressed | Actions taken or proposed to be taken to address recommendation(s) |
|-----|--|---|----------------------|--|---|---|
| | | ICES North satellite office. | | Recommendations have not been identified in order to avoid external threats to ICES systems. | 10. 24-Dec-2018 | Actions taken or proposed to be taken to address recommendations have not been identified in order to avoid external threats to ICES systems. |
| 22. | Network Monitoring TRA (a general description has been used here instead of the technology brand name) | Assess the design and implementation of the IT Infrastructure availability and performance monitoring solution. | 20-Jul-2018 | | 1. 16-Jul-2018 | |
| 23. | Auditing Tool TRA (a general description has been used here instead of the technology brand name) | Assess the design and implementation of the Active Directory and File Server change audit solution. | 31-Jul-2018 | | 1. 23-Nov-2018 2. 23-Nov-2018 | |
| 24. | Password TRA (a general description has been used here instead of the technology brand name) | Assess the design and implementation of the Enterprise Password Management software. | 01-Aug-2018 | | 1. 09-Aug-2018 2. 09-Aug-2018 | |
| 25. | Research Database Survey and Modules (a general description has been used here instead of the technology brand name) | Assess the architecture modification of the electronic data capture application. | 26-Oct-2018 | | 1. Approx. Aug-2018 2. Approx. Aug-2018 | |
| | | | | | | |

| # | Type of Audit | Description of Audit | Date Audit Completed | Recommendation(s) | Date recommendation(s) was or is proposed to be addressed | Actions taken or proposed to be taken to address recommendation(s) |
|-----|--|---|----------------------|-------------------|---|--|
| 26. | Electronic Management Tool TRA (a general description has been used here instead of the technology brand name) | Assess the design and implementation of the web based electronic management, auditing and reporting tool. | 12-Nov-2018 | | 1. 12-Dec-2018 2. 12-Dec-2018 1. 25-Oct-2018 | |
| 27. | Password Management Audit | Assess adequacy of ICES' password policy and procedures and other internal controls related to access to ICES Data. | 24-Oct-2019 | | TBD | |

Appendix J – Information Security Breaches

| # | Category | Notification Date | Extent | PHI Nature & Extent | Management Notice Date | Containment Measures | Containment Date | Third Party Notice Date | Investigation Start Date | Investigation Complete Date | Recommendation(s) | Manner Recommendation(s) Addressed | Date Recommendation(s) Addressed |
|---|----------|-------------------|--|----------------------|------------------------|---|------------------|-------------------------|--------------------------|-----------------------------|--|--|----------------------------------|
| 1 | Incident | 10-Mar-2018 | An unidentified person entered ICES through the lobby door and remained until after hours. The intruder opened the reception cage and stole office supplies and a parking transponder. | No PHI was involved. | 11-Mar-2018 | The intruder was detected after it was discovered the items were missing. No containment was required. No PHI was involved. | 11-Mar-2018 | N/A | 11-Mar-2018 | 11-Mar-2018 | ICES security personnel will ensure that the lobby door is locked every evening at 7pm and re-opened at 7am Monday through Friday. | The recommendation was accepted and addressed as proposed. | 11-Mar-2018 |

| # | Category | Notification Date | Extent | PHI Nature & Extent | Management Notice Date | Containment Measures | Containment Date | Third Party Notice Date | Investigation Start Date | Investigation Complete Date | Recommendation(s) | Manner Recommendation(s) Addressed | Date Recommendation(s) Addressed |
|---|----------|-------------------|---|----------------------|------------------------|--|------------------|-------------------------|--------------------------|-----------------------------|---|---|----------------------------------|
| 2 | Incident | 04-Mar-2019 | On 01-Mar-2019 communication between the security alarms in the ICES McMaster IT closet was disconnected from the Hamilton Health Sciences (HHS) controller. Alarms were functioning but notification of alarm was not communicated to the security office. | No PHI was involved. | 04-03-2019 | TAK technologies representative reconnected all wires and confirmed alarm communications were restored at 11:30am 04-Mar-2019. | 04-Mar-2019 | N/A | 04-Mar-2019 | 04-Mar-2019 | Address lapses in notifications. | A meeting was held to address lapses in notifications. | 12-Mar-2019 |
| 3 | Incident | 21-Mar-2019 | ID badge at ICES uOttawa was lost. | No PHI was involved. | 21-Mar-2019 | Lost ID badge was reported to onsite security and a new ID badge and identification PIN was set. | 21-Mar-2019 | N/A | 21-03-2019 | 21-03-2019 | Protection of property reminder incorporated into security awareness. | Protection of property reminder incorporated into security awareness. | 22-Jul-2019 |

| # | Category | Notification Date | Extent | PHI Nature & Extent | Management Notice Date | Containment Measures | Containment Date | Third Party Notice Date | Investigation Start Date | Investigation Complete Date | Recommendation(s) | Manner Recommendation(s) Addressed | Date Recommendation(s) Addressed |
|---|----------|-------------------|---|--|------------------------|--|------------------|-------------------------|--------------------------|-----------------------------|---|--|--|
| 4 | Incident | 06-May-2019 | An investigator's laptop and hard drive back-up was stolen from his vehicle. | Only summary level results were saved on the stolen devices. | 06-May-2019 | Lock function was activated remotely for this laptop. Laptop was protected using password and facial recognition. Hard drive was password protected. | 06-May-2019 | N/A | 06-May-2019 | 07-May-2019 | Protection of property reminder incorporated into security awareness. | Protection of property reminder incorporated into security awareness. | 22-Jul-2019 |
| 5 | Incident | 13-May-2019 | Malware infection. A user's computer screen was locked and prompted a Windows security warning. | No PHI was involved. | 13-May-2019 | Computer was disconnected from the network. The user's folders were scanned for infections. | 13-May-2019 | N/A | 13-May-2019 | 14-May-2019 | <ol style="list-style-type: none"> 1. General communication regarding malware. 2. Implement a technical control to mitigate this type of attack, i.e., web content filtering. | <ol style="list-style-type: none"> 1. General communication regarding malware. 2. "Next generation firewalls" will be installed. | <ol style="list-style-type: none"> 1. 22-Jul-2019 2. TBD. Next generation firewalls is currently in the procurement stage. |
| 6 | Incident | 24-May-2019 | The computer that monitors the security system for ICES Queen's had a | No PHI was involved. | 24-May-2019 | Onsite support enlisted same day as notified. | 24-May-2019 | N/A | 24-May-2019 | 28-May-2019 | Instruction to review monitoring logs daily until computer is restored. | Instruction accepted. | 24-May-2019 |

| # | Category | Notification Date | Extent | PHI Nature & Extent | Management Notice Date | Containment Measures | Containment Date | Third Party Notice Date | Investigation Start Date | Investigation Complete Date | Recommendation(s) | Manner Recommendation(s) Addressed | Date Recommendation(s) Addressed |
|---|----------|-------------------|--|----------------------|------------------------|---|------------------|-------------------------|--------------------------|-----------------------------|---|--|--|
| | | | critical system error. | | | | | | | | | | |
| 7 | Incident | 11-Jul-2019 | Suspected malware activity found on a user's computer. | No PHI was involved. | 11-Jul-2019 | Computer was disconnected from the network. User's folders were scanned for infections. | 11-Jul-2019 | N/A | 11-Jul-2019 | 11-Jul-2019 | <ol style="list-style-type: none"> 1. General communication regarding malware. 2. Implement a technical control to mitigate this type of attack, i.e., web content filtering. | <ol style="list-style-type: none"> 1. General communication regarding malware. 2. "Next generation firewalls" will be installed. | <ol style="list-style-type: none"> 1. 22-Jul-2019 2. TBD. Next generation firewalls is currently in the procurement stage. |

Appendix K – Glossary

A. ICES Data

| Data | Description |
|-----------------|--|
| ACG | Adjusted Clinical Group |
| ACG Macro | Adjusted Clinical Group Macro Program |
| ADP | Assistive Devices Program |
| AHCAS | Allied Health Centralized Application Service |
| AKI | Acute Kidney Injury |
| ALR | Activity Level Support |
| AQHI | Air Quality Health Index |
| ASTHMA | Ontario Asthma Database |
| AVGPRICE | Average Price |
| BCG | Bacille Calmette-Guerin |
| BORN | Better Outcomes Registry & Network |
| BRIDGES-RAPT | BRIDGES - Rapid Assessment for Psychopharmacologic Treatment |
| BRTRC | Bariatric Registry |
| CANHEART Cohort | Cardiovascular Health in Ambulatory Care Research Team Cohort |
| CANOC | Canadian Observational Cohort Collaboration |
| CAPE | Client Agency Program Enrollment |
| CBI | Community Business Intelligence |
| CCHS | Canadian Community Health Survey |
| CCN | Cardiac Care Network |
| CCO | Cancer Care Ontario |
| CCRS | Continuing Care Reporting System |
| CCRS-LTC | Continuing Care Reporting System – Long Term Care |
| CENSUS | Ontario Census Area Profiles |
| CENSUSCA | Canada Census Area Profiles |
| Cerner | Cerner lab data |
| CFDR | Canadian Cystic Fibrosis Data Registry |
| CHAP | Cardiovascular Health Awareness Program |
| CHC | Community Health Centers |
| CHCCDB | Central Home Care Client Database |
| CHEO | Children's Hospital of Eastern Ontario |
| CHF | Ontario Congestive Heart Failure Database |
| CIC | Immigration, Refugees and Citizenship Canada (previously Citizenship and Immigration Canada) |
| CHI-CCRS | Canadian Institute for Health Information - Continuing Care Reporting System |
| CHI-DAD | Canadian Institute for Health Information - Discharge Abstract Database |
| CHI-NA CRS | Canadian Institute for Health Information - National Ambulatory Care Reporting System |
| CHI-NRS | Canadian Institute for Health Information - National Rehab System |
| CHI-SDS | Canadian Institute for Health Information - Same Day Surgery Database |
| CIRT | Colonoscopy Interim Reporting Tool |
| CJRR | Canadian Joint Replacement Registry |
| CLD | Clinical Liver Database |

| | |
|----------|--|
| COACH | Comparison of Outcomes and Access to Care for Heart Failure |
| CONTACT | Yearly contact with health services |
| COPD | Ontario Chronic Obstructive Pulmonary Disease Database |
| Coroner | Cause of Death from Coroner Investigation |
| CORR | Canadian Organ Replacement Registry |
| CPCSSN | Canadian Primary Care Sentinel Surveillance Network |
| CPDB | Care Provider Database |
| CPDR | Canadian Cystic Fibrosis Data Registry |
| CPRO | Client Profile Database |
| CPSO | College of Physicians and Surgeons of Ontario |
| CTMRI | CT/MRI Abstracted Data |
| Cytobase | Cervical Cytology Data |
| DALHIN | Mapping DAs to LHINs and SubLHINs |
| DATIS | Drug and Alcohol Treatment Information System |
| DCIS | Ductal Carcinoma in Situ |
| DDARD | Drug and Drug/Alcohol-related Deaths |
| DEMENTIA | Ontario Dementia Database |
| DIN | List of drugs from ODB formularies with DINs, |
| DMAR | Dialysis Measurement Analysis Reporting System |
| DPD | Drug Product Database |
| EDI | Early Development Index |
| EFFECT | Enhanced Feedback for Effective Cardiac Treatment |
| EMRALD | Electronic Medical Records Administrative Linked Database |
| EMRPC | Electronic Medical Records Primary Care – Master Linking Crosswalk |
| ERCLAIM | OHIP emergency claims created at ICES from OHIP claims |
| ESAS | Symptom Management Database |
| ESTSOB | Estimated Schedule of Benefits Price |
| ETHNIC | Surname-based Ethnicity Group |
| GAPP | GAPP decision support systems (physician payments) |
| GDML | Gamma Dynacare Medical Laboratories |
| GEM-SURF | The Canadian Urban and Land Surface External Modeling System |
| GIS Data | Geographic Information System Data |
| HCD | Home Care Database |
| HCDMOH | Home Care Database - Ministry of Health |
| HCES | Health Care Experience Survey |
| HHT | Health and Housing in Transition Study |
| HIV | Ontario HIV Database |
| HIVOHTN | HIV-infected Ontarians - Ontario HIV Treatment Network |
| HLINK | Health Links Datasets |
| HOBC | Health Outcomes for Better Information and Care |
| HSU | High Service User |

| | |
|-------------------|--|
| HSC-ACTS | Health and Social Care Act |
| HTN | HIV Treatment Network |
| HYPHER | Ontario Hypertension Database |
| Hypertension | Ontario Hypertension Database |
| HYPONATREMIAatTOH | Hyponatremia at The Ottawa Hospital |
| ICES desktop | The online environment hosted and controlled by ICES on which external researchers are permitted to access and analyze data. |
| IBD | Inflammatory Bowel Disease |
| ICD | Ontario Implantable Cardioverter Defibrillators |
| INST | Ministry of Health funded institutions |
| IPDB | ICES Physician Database |
| iPHIS | Integrated Public Health Information System |
| IRS | Indian Registry System |
| LCVIS | London Cardiovascular Information System |
| LHIN | Local Health Integration Network |
| LHSC | London Health Sciences Centre |
| LIDS | Landed Immigrant Data System |
| LOC | Levels of Care |
| LTCH | Determinants of Quality in Ontario Long Term Care Homes |
| MCSS | Ministry of Community and Social Services - Service Delivery Model Technology (SDMT) |
| MI Database | Is this referring to the MIS database? |
| MIS | Management Information System |
| MNO | Métis Nation of Ontario |
| MNOHS | Métis Nation of Ontario Household Survey |
| MOHLTC | Ministry of Health and Long-Term Care |
| MomBaby | Mother-baby Linked Database |
| MRN | Medical Record Number |
| NCIC | National Cancer Institute of Canada |
| NDFP | New Drug Funding Program |
| NMS | Narcotics Monitoring System |
| NOAC | New Oral Anticoagulant |
| NPHS | National Population Health Survey |
| NRS | National Rehabilitation Reporting System |
| NSO | Newborn Screening Ontario |
| OACCAC | Ontario Association of Community Care Access Centres |
| OBSP | Ontario Breast Screening Program |
| OCC | Re-check this data set (#629) |
| OSCC | Ontario Crohn's and Colitis Cohort Database |
| OCCI | Ontario Case Costing Initiative |
| OCCM | Occupancy Monitoring |
| OCR | Ontario Cancer Registry |
| OCRIS | Ontario Cancer Registry Information System |

| | |
|------------|---|
| ODB | Ontario Drug Benefit |
| ODD | Ontario Diabetes Database |
| ODR | Organ Donor Registry |
| OHCAS | Ontario Home Care Administrative System |
| OHIP | Ontario Health Insurance Plan Claims Database |
| OHS | Ontario Health Survey |
| OHSURVEY | Ontario Health Survey |
| OLIS | Ontario Laboratories Information System |
| OMHRS | Ontario Mental Health Reporting System |
| OMID | Ontario Myocardial Infarction Database |
| OMMMS | Ontario Maternal Multiple Marker Screening |
| ON-Marg | Ontario Marginalization Index |
| OPHRDC | Ontario Physician Human Resources Data Centre |
| ORAD | Ontario Rheumatoid Arthritis Database |
| ORGD | Ontario Registrar General - Death |
| ORRS | Ontario Renal Reporting System |
| OSR | Ontario Stroke Registry |
| OTR | Ontario Trauma Registry |
| PACT-HF | Patient-Centered Care Transitions in Heart Failure |
| PCAS | Primary Care Access Survey |
| PCCF | Postal Code (Macro) |
| PCPOP | Primary Care Population |
| PC-SUBLHIN | Postal Code Sub-Local Health Intergration Network |
| PHO | Public Health Ontario |
| PHOL | Public Health Ontario Laboratory |
| PHOL | Public Health Ontario Lab |
| PHYSNET | Ontario Multispecialty Physician Networks |
| PIBD | Pediatric Inflammatory Bowel Disease Database |
| POGONIS | Pediatric Oncology Group of Ontario Networked Information System |
| POP | Yearly Ontario intercensal and postcensal population estimates and projection |
| POPCAN | Yearly Canada intercensal and postcensal estimates by age and sex. |
| PROUD | PROUD Study Survey Data |
| PSTLyear | Best yearly postal code |
| QUALICOPC | Quality and Costs of Primary Care Survey |
| RAICA | Resident Assessment Instrument - Contact Assessment |
| RAI-CA | Resident Assessment Instrument - Contact Assessment Data |
| RAIHC | Resident Assessment Instrument - Home Care |
| RAIHCMOH | Resident Assessment Instrument - Home Care - Ministry of Health |
| RCSN | Registry of the Canadian Stroke Network |
| REF | Reference tables for CCP, CCI, ICD9, ICD9CCP, ICD10 |
| RPDB | Registered Persons Database |

| | |
|-----------------------------------|--|
| SAVR | Systematic Assessment of Vascular Risk |
| SDS | Same Day Surgery Database |
| SPA | Symptom Perception in Asthma |
| SPIRIT | Stroke Performance Indicators for Reporting, Improvement and Translation |
| STDPRICE | Standard Price |
| SWCCAC eShift | South West Community Care Access Centre |
| TAVI | Transcatheter Aortic Valve Implantation |
| TB | Tuberculosis |
| TCHCP | Toronto Community Hepatitis C Program - Registry Project Data |
| TGLN | Trillium Gift of Life Network |
| TIBDN | Toronto Invasive Bacterial Disease Network |
| TLC | TeleCare Study Data |
| TLMHP | TeleLink Mental Health Program |
| TRIBE | Translational Research Investigating Biomarker Endpoints – Acute Kidney Injury |
| TWHLC | Toronto Western Hospital Liver Clinic |
| UHN CABG | University Health Network - Coronary Artery Bypass Grafting |
| UHN PCI | University Health Network - Percutaneous Coronary Intervention |
| UHN VT Catheter Ablation Database | University Health Network Ventricular Tachycardia Catheter Ablation Database |
| Xponent | Physician-level evaluation of antibiotic prescribing variability |

B. Other Terms Used in ICES' Report

| Term | Description |
|----------------------------|--|
| AHRQ | Applied Health Research Question |
| CEO | Chief Executive Officer |
| Coded information | Identifiable information from which direct personal identifiers have been removed or encoded, and which may have an ICES identifier applied using an algorithm that is not known to the user |
| Cohort | A group of individuals who share a defining characteristic such as a particular disease or condition |
| CPLO | Chief Privacy and Legal Officer |
| DAS | Data and Analytic Services |
| De-identified information | Information from which any direct personal identifiers have been removed or encoded and other fields have been adjusted so that the data could not, in any reasonably foreseeable circumstance, be used, either alone or in combination with other information, to identify a person |
| Direct personal identifier | A specific identifier that identifies a person, such as name or personal health number |
| DQIM | Data Quality and Information Management |
| DSA | Data sharing agreement |
| EPM | Evaluate, Planning or Management |
| ICES | Institute for Clinical Evaluative Sciences |
| ICES abstractor | A person contracted directly by ICES to abstract information from medical charts or reports |

| | |
|------------------------------------|--|
| ICES collaborating researcher | A person who is not employed by nor affiliated with ICES but who collaborates on an ICES project |
| ICES controlled use data; ICES CUD | ICES data that is available for ICES projects subject to conditions agreed with the data custodian, typically additional approval or reporting of projects or subject-area restrictions |
| ICES data covenantor | A person authorized to access personally identifiable information that contains direct personal identifiers for the purposes of receiving, transferring or destroying data, for the encryption or removal of direct personal identifiers, or for data linkage using direct personal identifiers |
| ICES data dictionary | The searchable online catalogue of ICES data holdings that describes the attributes and terms and conditions that govern use of ICES data holdings |
| ICES data holding | An ICES data holding is any ICES general use data or ICES controlled use data |
| ICES general use data; ICES GUD | ICES data that is available for any ICES project, subject to ICES policies and procedure |
| IDAVE | ICES Data and Analytic Virtual Environment |
| Identifiable information | Information that identifies a person or for which it is reasonably foreseeable in the circumstances it could be used, either alone or in combination with other information, to identify a person. ICES data that includes direct personal identifiers or indirect personal identifiers is identifiable data |
| Indirect personal identifier | Information that could reasonably be expected to identify an individual through a combination of indirect personal identifiers, such as date of birth or date of admission or service |
| Individual-level information | Information that relates to a specific individual |
| IPC | Information and Privacy Commissioner |
| Knowledge user | A person who can apply the results of an ICES project to make decisions. |
| KU | Knowledge user |
| LAN | Local area network |
| LPSO | Local Privacy and Security Officer |
| NDA | Non-disclosure agreement |
| OCA | Offline chart abstraction tool |
| OnTap | ICES e-newsletter |
| PDC | Primary data collection |
| PHIPA | Personal Health Information Protection Act |
| PIA | Privacy impact assessment |
| PL | Program Leader |
| PLO | Privacy and Legal Office |
| Principal investigator | The individual with principal scientific responsibility for conduct of a project. |
| Privacy impact assessment | A documented assessment designed to identify and manage the elimination or mitigation of privacy risks associated with a process, system or initiative |
| Project-specific data; PSD | ICES data available only for the purposes of a specific project or series of related projects |
| RAE | Research and Analytic Environment |
| REB | Research ethics board |
| Research outputs | Summary information that has been de-identified |
| Risk-reduced coded data | Coded data that has been assessed for the identifiability of any underlying individuals and adjusted as required until the level of identifiability is low. |

| | |
|---------------------|---|
| SIEM | System information and event management |
| Small cell | Summary information, typically in the form of counts, percentages or means, that are based on five or fewer observations |
| SME | Subject matter expert |
| SOP | Standard operating procedure |
| SOW | Statement of Work |
| Summary information | Information that has been summarized at a group level, for which, subject to the presence of small cells, the risk of re-identification is very low (e.g., a table of characteristics by age group) |



Data
Discovery
Better Health