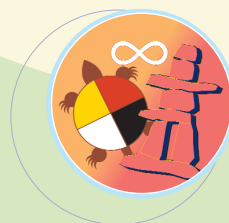


# Enhancing the Primary Health Care Data Collection Infrastructure in Canada

## Report 2

Pan-Canadian Primary Health Care  
Indicator Development Project



Canadian Institute  
for Health Information

Institut canadien  
d'information sur la santé

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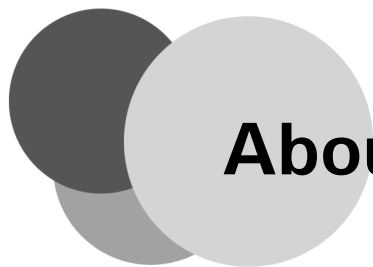


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# About CIHI

The Canadian Institute for Health Information (CIHI) collects and analyzes information on health and health care in Canada and makes it publicly available. Canada's federal, provincial and territorial governments created CIHI as a not-for-profit, independent organization dedicated to forging a common approach to Canadian health information. CIHI's goal: to provide timely, accurate and comparable information. CIHI's data and reports inform health policies, support the effective delivery of health services and raise awareness among Canadians of the factors that contribute to good health.

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# Executive Summary

Primary health care (PHC) has been called the foundation of Canada's health care system and is the most common type of health care that Canadians experience.<sup>1</sup> An estimated \$5 billion annually is spent just on family physician/general practitioner (FP/GP) fee-for-service related services in Canada.<sup>2</sup> Federal/provincial/territorial governments have agreed that PHC is a priority,<sup>3</sup> however, at the present time there is relatively little comparative information available about how the PHC system is evolving. We also know little about the way services are delivered and the results of these services. These information gaps may affect our collective ability to measure, manage and improve primary health care in Canada.

The CIHI led Pan-Canadian Primary Health Care Indicator Development Project, funded through Health Canada's Primary Health Care Transition Fund (PHCTF), aimed to:

- Develop a set of agreed-upon PHC indicators with which to compare and measure PHC at multiple levels within jurisdictions across Canada.
- Provide advice on a future data collection infrastructure that could supply the data to report these indicators across Canada.

The pan-Canadian PHC indicators were developed to correspond to a series of PHCTF National Evaluation Strategy (NES) Objectives, Supports and Evaluation Questions. This guiding framework was developed in April 2005 through a collaborative process of literature review, expert advice and stakeholder participation.<sup>4</sup>

This report provides options for enhancing the pan-Canadian PHC data collection infrastructure (i.e. the second project objective) so it could provide the data for the indicators and other measurement activities. A companion report in two volumes, entitled *Pan-Canadian Primary Health Care Indicators*, presents the agreed-upon set of PHC indicators.<sup>5</sup> The agreed-upon PHC indicators provide information on those aspects of PHC that a broad range of stakeholders from across the country deemed most important to measure.

## ***What Is Important to Measure in PHC and How to Measure It***

Through an extensive consensus building process, a list of 105 PHC indicators that correspond to the NES Evaluation Questions was identified and agreed upon by a broad range of stakeholders.<sup>5,6</sup> This list can be used as a whole or to form subsets of indicators to address different perspectives or needs. For example, an abridged list of 30 PHC indicators was created by CIHI, from the full list of 105, as one option for a system-wide summary of PHC (Appendix A). The full list of 105 and the abridged list of 30 indicators can also be used to inform and prioritize the enhancement of the data collection infrastructure that has the potential, over time, to substantially increase the availability of PHC data.



A variety of PHC clinical administrative and survey data sources would be needed to calculate the full list of 105 PHC indicators. The types of data sources required to calculate the PHC indicators are listed in the following table. The table also describes the number of indicators that could be fully or partially calculated using currently available data sources, modified or expanded data sources and those requiring new data sources.

**TABLE 1: PHC Indicators and Availability of Pan-Canadian Data Sources<sup>i</sup>**

TYPE OF DATA SOURCE REQUIRED	INDICATORS AVAILABLE WITH CURRENT DATA SOURCES	INDICATORS AVAILABLE WITH MODIFIED DATA SOURCES	INDICATORS AVAILABLE WITH EXPANDED DATA SOURCES	NO CURRENT DATA SOURCE EXISTS	TOTAL
Client/patient or population-based survey data (e.g. CCHS)	9	5	17	-	31
Provider survey data (e.g. NPS)	6	4	5		15
Organization survey data (e.g. NPS)	-	-	21	2	23
Clinical administrative data (e.g. EMRs, HMDB, DAD, NACRS, MD claims, NPDUIS, diagnostic imaging and lab data)	1	3	12	17	33
Other administrative data (e.g. Scott's Medical Database, NPDB)	2	-	-	1	3
<b>TOTAL</b>	<b>18</b>	<b>12</b>	<b>55</b>	<b>20</b>	<b>105</b>

<sup>i</sup> The Pan-Canadian Data Sources referred to in Table 1 include the following:  
 CCHS—Canadian Community Health Survey;  
 NPS—National Physician Survey;  
 HMDB—Hospital Morbidity Database;  
 DAD—Discharge Abstract Database;  
 NACRS—National Ambulatory Care Reporting System;  
 MD claims—provincial/territorial fee-for-service physician claims data;  
 EMRs—PHC practice-based electronic medical records and paper-based patient charts;  
 Diagnostic imaging and lab data—could be obtained from provincial/territorial data sources;  
 NPDUIS—National Prescription Drug Utilization Information ;  
 Scott's—Scott's Medical Database (formerly Southam Medical Database); and  
 NPDB—National Physician Database.

See Appendix C for more information on these data sources.



Eighteen of the 105 agreed-upon indicators can be calculated using existing data sources although half of these can only be partially reported. Indicators that can only be partially calculated with an existing data source typically refer to data sources that may only report results for some (e.g. FPs/GPs) but not all PHC providers. An additional 12 indicators could be fully or partially calculated by modifying questions in existing surveys.

There is no existing pan-Canadian data source for 75 of the indicators. Calculating them would require the development of new data sources or the significant expansion of an existing survey or administrative database. For example, an additional 55 indicators could be calculated by expanding the National Physician Survey (NPS) (n = 26), the Canadian Community Health Survey (CCHS) (n = 17) and enhancing fee-for-service physician billing data (with prescription drug, diagnostics and lab data) (n = 12). Although significant modifications to these existing data sources would enable the calculation of many additional PHC indicators, experience suggests that large-scale changes to these established data sources can be very difficult to negotiate, due to the potential impacts of expanding these data sources.

Given the high yield of PHC indicators that can be reported by modifying and expanding the CCHS and NPS, exploring opportunities to enhance these two sources of PHC data is considered a priority for enhancing the PHC data collection infrastructure.

Efforts could also be made to improve the capacity for collecting the clinical administrative data that relates to quality and outcomes, health human resources and health spending. Information on quality and outcomes is essential for knowing how well the PHC system is working. Data for the PHC clinical administrative indicators would likely need to be collected from a combination of medical charts (preferably electronic), and diagnostic imaging, prescription drug and lab data sources.

While the fully integrated electronic health record (EHR) is being developed across Canada, the clinical administrative data could also be obtained through periodic quality studies, similar to those that have been carried out in research studies in the U.S., U.K and selected parts of Canada, or through PHC registries. The clinical administrative data requirements could be used to inform the content of clinic-based electronic medical records (EMRs) and the fully integrated EHR. Once the HER is in place across the continuum of care, it could be a valuable source of the data required for the clinical administrative PHC indicators and many other PHC improvement-related activities.



### ***Enhancing the Pan-Canadian PHC Data Collection Infrastructure***

The options presented below can be used by a broad range of stakeholders to enhance the PHC data collection infrastructure. It is recognized that this will be a long-term effort, taking advantage of existing and emerging opportunities to address key PHC information gaps.

#### **General Advice for Enhancing the PHC Data Collection Infrastructure:**

- 1.1** Leadership and support will be important to ensure the effectiveness and relevance of initiatives intended to improve the PHC data collection infrastructure and improve the availability of the information required to manage PHC in Canada.
- 1.2** Maintain the momentum created through the PHC Indicator Development Project through partnerships that build on existing PHC activities.
- 1.3** Adopt a flexible and phased approach that respects the differences across jurisdictions and provider groups, and builds on leadership and opportunity. Consider initially focusing on the abridged list of 30 indicators or development of selected data sources, if opportunities emerge. In some cases, privacy sensitive record linkage, across multiple data sources at the record level, would reduce respondent burden and allow for the production of more meaningful analyses and reports.
- 1.4** Plan for, and where appropriate, pilot the recommended PHC data collection infrastructure enhancement options presented below through partnerships with jurisdictions, providers and researchers.
- 1.5** The data collection infrastructure should be developed to facilitate comparisons across jurisdictions and over time where possible.
- 1.6** The data collection infrastructure should be flexible and modifiable, given there may be an interest in collecting other types of PHC data in the future as PHC renewal efforts proceed. Revisit the scope of the data collection infrastructure periodically to ensure it matches ongoing information needs.

#### **PHC Client/Patient and Population-Based Survey Enhancement:**

- 2.1** Explore opportunities to modify and expand the questions in the pan-Canadian population-based CCHS to capture the PHC data required to fully or partially report the maximum number of client/patient PHC indicators. This may include adding and modifying questions in the core and special theme modules of the CCHS to facilitate reporting of the PHC indicators related to PHC access, client/patient experiences and satisfaction, chronic disease management and health risk behaviours.



- 2.2 Encourage the use of the indicators in other PHC measurement efforts, such as health region and PHC population or client/patient surveys.

**PHC Provider and Organization Survey Enhancement:**

- 3.1 Explore opportunities to modify and expand the NPS to capture the PHC data required to fully or partially report the maximum number of provider and organizational indicators. Ideally, some of these changes will be made in time to capture new PHC indicator data in the 2007 cycle of NPS.
- 3.2 Explore opportunities to capture PHC provider and organization data from other PHC providers from existing and new surveys. One option that could be explored is the expansion of NPS, beyond physicians, to serve as a pan-Canadian PHC provider and organization survey that builds on the existing NPS and continues to allow for a link between FPs/GPs and physician specialists through NPS. This would require an extensive amount of collaboration and might not be feasible given the existing and important role of the NPS. If NPS expansion is not feasible, other mechanisms could be explored, such as drawing on existing and new provider surveys to capture provider and organization data for the PHC indicators, perhaps with an initial focus on the relevant indicators on the abridged list of 30.
- 3.3 Explore opportunities to access or inform the development of PHC organization and provider registries so they can be used to identify samples for the surveys of PHC organizations and providers that will provide data required to report the related indicators.

**PHC Clinical and Other Administrative Data Source Enhancement:**

- 4.1 Explore opportunities to obtain agreement on common variables and/or content standards that should be included as part of the content of a PHC electronic medical record. This would support the collection of comparable PHC information from clinic-based electronic medical records that could be used to report some of the clinical administrative indicators and it could be used to inform the development of the content for the integrated electronic health record (EHR).
- 4.2 Explore opportunities to enhance data submissions from relevant regulatory bodies/associations and provinces/territories to existing (and developing) pan-Canadian health human resource and health spending databases to facilitate reporting of the related PHC indicators.



***You Can't Manage What You Can't Measure***

Given that an estimated \$5 billion annually is spent just on FP/GP fee-for-service related services in Canada<sup>2</sup> and data on PHC indicators identified as a priority by a group of stakeholders is limited, improving the PHC data collection infrastructure has the potential to equip decision-makers and policy makers with more of the information they need to improve the effectiveness of PHC and its impact on the health care system and the health of the population. Improvements in the availability of PHC information might also support efforts to communicate more effectively with the public regarding the performance of their health care system.

In recent years, considerable investments have been made with the goal of improving PHC in Canada, but the information available to measure and manage PHC renewal in Canada is limited. Many providers, communities, researchers and policy makers have committed time, energy and resources to improving primary health care across Canada. Through continued collaboration and commitment, some of the options provided in this report could be used to increase the availability of comparable and relevant PHC information across Canada.



# 1.0 Introduction

This section describes the process for developing options for enhancing the pan-Canadian PHC data collection infrastructure. This process included:

- a scan of pan-Canadian and provincial/territorial health survey and databases;
- an international survey of 5 country experiences in PHC data infrastructure development;
- a literature review;
- key informant interviews;
- input from Canadian PHC practitioners, researchers and policy makers;
- advisory committee and working group support; and
- Federal/Provincial/Territorial Primary Health Care Transition Fund (PHCTF) Working Group input.

Primary health care (PHC) has been called the foundation of Canada's health care system.<sup>1</sup> From a health system perspective, PHC plays a key role in health improvement and illness care, and is often the gateway to other health and human services.<sup>7</sup>

On September 11, 2000, Canada's First Ministers announced that, "Improvements to primary health care are crucial to the renewal of health services." Based on this agreement, the federal government launched the \$800 million Primary Health Care Transition Fund (PHCTF). The PHCTF reflects a shared agreement between the federal and provincial/ territorial governments to work together to improve PHC across the country, and explore new ways of delivering PHC.

To help understand and improve PHC renewal, Health Canada established the PHCTF National Evaluation Strategy (NES). As one component of the NES, a series of NES Objectives, Supports, and Evaluation Questions were developed. This component of the NES was implemented between late 2004 and early 2005. Through a collaborative process of literature review, expert advice and stakeholder participation, a series of over 50 evaluation questions were developed to map to the NES Objectives and Supports.<sup>4</sup>



The Canadian Institute for Health Information (CIHI) was asked to take the lead in a collaborative process of developing pan-Canadian PHC indicators that corresponded to the NES Objectives, Supports and Evaluation Questions, and to identify options for filling PHC data gaps in the immediate, short and long term.

## **1.1 The PHC Indicator Development Project— Overview**

With a wide range of evaluation questions, the need for a broad range of indicators was considered important. Health indicators are standardized measures that allow health status, health system performance and characteristics among different populations and jurisdictions to be compared.<sup>8</sup> Primarily, health indicators are a tool to help provinces/territories, regions and organizations track progress in the improvement and maintenance of a population's health and health system functions. For example, indicators can be used for measuring performance, strategic planning and priority setting, quality improvement and for conveying important health information to the public.

In early 2005, CIHI launched a project to:

- Develop a set of agreed-upon PHC indicators with which to compare and measure PHC at multiple levels within jurisdictions across Canada.
- Provide advice on a future data collection infrastructure that could supply the data to report these indicators across Canada.

The NES Objectives, Supports and Evaluation Questions framed the development of the PHC indicators.

An extensive process of consultation and participation was used to develop the PHC indicators.<sup>5, 6</sup> The process included the steps listed below:

- an environmental scan identified a preliminary list of indicators from pan-Canadian and international sources;
- working groups refined the preliminary list of indicators, and developed detailed definitions and specifications for each proposed indicator;
- a web-based consultation survey solicited feedback on the emerging indicators from a broad set of stakeholders across Canada;
- consultations with a range of policy makers, stakeholders from health authorities and professional health provider associations, and other individuals across the country;





- two consensus conferences held in May and November 2005 where policy makers, care providers and system managers reviewed results from the above activities; and
- three rounds of a modified Delphi process,<sup>ii</sup> with input from over 70 participants, were conducted to rate the indicators on their importance in measuring an important aspect of the PHC system.

Through the consensus building process, a list of 105 PHC indicators that corresponded to the NES Evaluation Questions was identified and agreed upon by a broad audience of stakeholders.<sup>5</sup> This list can be used as a whole or to form subsets of indicators to serve different perspectives. Appendix A includes an example of an abridged list of 30 representative indicators that was selected by CIHI based primarily on indicator ratings from the third round of the modified Delphi process. The list of 105 or the abridged list could be used to inform the setting of priorities for enhancing the PHC data collection infrastructure.

## **1.2 Process for Developing Advice for Pan-Canadian PHC Data Collection Infrastructure Enhancement**

The process of identifying sources that could be used for reporting the set of pan-Canadian PHC indicators was not restricted to existing data sources. There was clear recognition by the project participants, that enhancing current data sources and creating new ones would be a critical factor in the future reporting of the PHC indicators. In this phase of the PHC Indicator Development Project, the objective was to describe the data collection infrastructure needed to calculate the PHC indicators with reliable and comparable data.

For this project, “infrastructure” refers to regular and on-going methods of data collection and data sources and not to the hardware (i.e. technical architecture/specifications, associated policies and procedures, and specifications on implementation), that will be needed to create interoperable data systems.

---

ii. A modified Delphi process is an empirically validated expert consultation process that is used to identify agreement among a group of experts who are often geographically separated. Organizations and/or researchers conduct a series of written surveys using a group of experts. There are variations on the technique, but it usually involves asking experts to rate items on a Likert scale (1–9). Typically there is a series of 2–3 rounds that build on previous results. Responses are collated and respondents are sent their response and the response of the group as a whole.

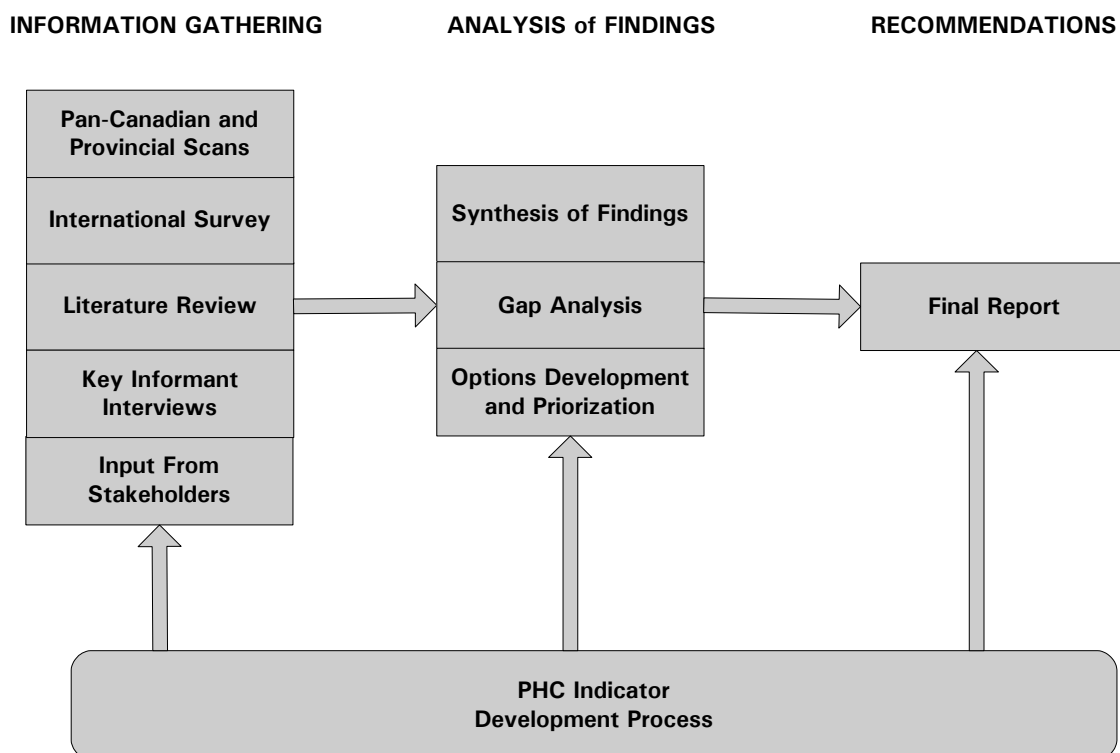


This report provides answers to the following questions:

- What are the existing pan-Canadian and provincial/territorial data sources of PHC information?
- What types of data collection would be required to report the PHC indicators?
- What new or expanded PHC data sources would be required to augment existing sources?
- What strategies and options for enhancing data sources will increase the pan-Canadian capacity for reporting PHC information?

A series of steps involving information gathering, analysis and advice was undertaken between June and December 2005 to develop answers to the questions above. The following figure depicts the steps and activities undertaken in order to develop the advice for enhancing the pan-Canadian PHC data collection infrastructure.

**FIGURE 1: Overview of Process for Developing Advice for PHC Data Collection Infrastructure in Canada**



### ***Scan of Pan-Canadian and Provincial Data Sources***

CIHI identified experts on existing pan-Canadian and provincial/territorial data sources, potential and/or developing data sources, and other relevant data sources. During July and August 2005, CIHI conducted over 15 telephone interviews with experts on pan-Canadian sources, and 32 telephone interviews with provincial administrators of databases and survey coordinators. The transcripts of interviews were synthesized and analyzed and a background paper summarizing the findings was completed. Appendix E provides a list of the interviewees for the scan, international survey and key informant interviews.

Information was collected and summarized with a focus on:

- type and source of data being collected such as: physician fee-for-service claims, health promotion and prevention, health expenditures, registries, wait lists and incident report data;
- specific information on data elements, coverage, frequency of submission, data collection method, data quality features and sampling frame; and
- aspects of data collection infrastructure, for example, collection, processing and dissemination.

### ***International Survey***

CIHI identified five countries (Australia, Netherlands, United Kingdom, New Zealand, and United States) for inclusion in the international survey. Between July and October 2005, CIHI conducted telephone interviews with ten representatives working in government or other organizations in these countries who were involved in PHC indicator and data infrastructure development. A standardized interview guide was prepared and provided to interviewees in advance. Follow-up was done by telephone or by e-mail. In addition, a number of informal interviews were conducted in-person at meetings and conferences. The transcripts of interviews were synthesized and analyzed and a background paper summarizing the findings was completed.

### ***Key Informant Interviews***

Five leaders in PHC and data infrastructure were interviewed by telephone using a standardized interview guide. They were asked to provide input on critical success factors for implementing PHC data sources and infrastructure. The transcripts of interviews were synthesized and analyzed and were used to inform this report.



### ***Literature Review of Data Collection Methods***

The purpose of the literature review was to provide:

- background information on PHC data collection efforts;
- an overview of the common themes, challenges and success factors highlighted in Canadian and international settings; and
- a sample of international PHC data collection infrastructure initiatives and case studies.

An Internet search identified over 90 sources of information, including peer reviewed journal articles and “grey” literature such as policy reports and working papers. Findings were synthesized and analyzed and a background paper summarizing the findings was completed.

### ***Analysis and Results***

A PHC Data Collection Infrastructure Working Group was formed to provide advice on the development of this report. Members were selected for their expertise in PHC evaluation and health informatics/data infrastructure. Appendix F provides a list of working group membership and also indicates other project participants. The working group met monthly with the CIHI project team from September to December 2005. The working group also reviewed and integrated comments that evolved out of the November 2005 Consensus Conference and the PHC Indicator Development Project Advisory Committee.

A gap analysis was also completed using information obtained through the pan-Canadian and provincial scan of data sources. The gap analysis identified existing pan-Canadian sources that could be used to populate the PHC indicators and any data gaps that may currently exist. Critical success factors, lessons learned, issues, consistent themes and best practices regarding PHC data infrastructure development were identified based on findings from the literature review, key informant interviews, international survey, and pan-Canadian/provincial scan.

Options for enhancing the pan-Canadian PHC data collection infrastructure were identified based on findings from the gap analysis and the literature review, key informant interviews, and international scan.

A draft of the final report *Enhancing the Primary Health Care Data Collection Infrastructure in Canada* was forwarded to the Federal/Provincial/Territorial PHCTF Advisory Group and the PHC Indicator Development Project Advisory Committee. Input and advice from both groups was considered in the development of this report.



## 2.0 What Data Sources Would Be Required to Report Pan-Canadian PHC Indicators?

This section provides an overview of the data sources that would be required to report PHC indicators. These sources include: client/patient/population, provider and organizational surveys as well as clinical administrative and other administrative data sources.

Both survey and administrative data sources would be required to calculate the full list of 105 PHC indicators. Appendix B describes and differentiates these two types of data sources. A number of existing PHC related survey and administrative data sources could be used to calculate the PHC indicators. Appendix C provides an overview of existing pan-Canadian and provincial data sources.

The following table summarizes findings from the gap analysis, which assesses whether pan-Canadian data sources are available or not available to report the PHC indicators. Appendix D provides additional details on the gap analysis findings. Table 1, below, provides information on the number of indicators that can be reported by each type of data source. The data sources were grouped into the following categories:

- Client/patient-level data are obtained from surveying a sample of PHC clients/patients, whereas population-level data are collected by surveying the general population.
- Provider-level data are gathered from PHC providers through surveys.
- Organization-level data are obtained from PHC organizations or health regions through surveys.
- Clinical administrative data refers to PHC client/patient encounter data including diagnostics, drugs, immunizations and laboratory tests, as well as some hospital data.
- Other administrative data are obtained from sources such as health human resource or health expenditure databases.



**TABLE 1: PHC Indicators and Availability of Pan-Canadian Data Sources<sup>iii</sup>**

<b>TYPE OF DATA SOURCE REQUIRED</b>	<b>INDICATORS AVAILABLE WITH CURRENT DATA SOURCES</b>	<b>INDICATORS AVAILABLE WITH MODIFIED DATA SOURCES</b>	<b>INDICATORS AVAILABLE WITH EXPANDED DATA SOURCES</b>	<b>NO CURRENT DATA SOURCE EXISTS</b>	<b>TOTAL</b>
Client/patient or population-based survey data (e.g. CCHS)	9	5	17	-	31
Provider survey data (e.g. NPS)	6	4	5	-	15
Organization survey data (e.g. NPS)	-	-	21	2	23
Clinical administrative data (e.g. EMRs, HMDB, DAD, NACRS, MD claims, NPDUIS, diagnostic imaging and lab data)	1	3	12	17	33
Other administrative data (e.g. Scott's Medical Database, NPDB)	2	-	-	1	3
<b>TOTAL</b>	<b>18</b>	<b>12</b>	<b>55</b>	<b>20</b>	<b>105</b>

iii. The Pan-Canadian Data Sources referred to in Table 1 include the following:

- CCHS—Canadian Community Health Survey;
- NPS—National Physician Survey;
- HMDB—Hospital Morbidity Database;
- DAD—Discharge Abstract Database;
- NACRS—National Ambulatory Care Reporting System;
- MD claims—provincial/territorial fee-for-service physician claims data;
- EMRs—PHC practice-based electronic medical records and paper-based patient charts;
- Diagnostic imaging and lab data—could be obtained from provincial/territorial data sources;
- NPDUIS—National Prescription Drug Utilization Information System ;
- Scott's—Scott's Medical Database (formerly Southam Medical Database); and
- NPDB—National Physician Database.

See Appendix C for more information on these data sources.

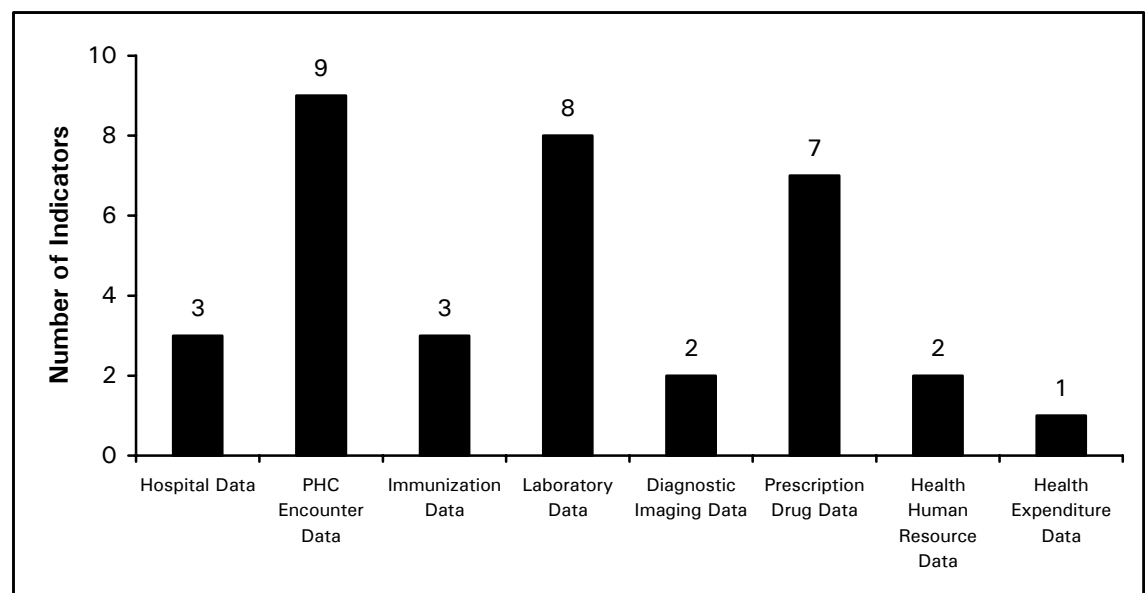


Eighteen of the 105 agreed upon indicators can be calculated using existing data sources, of which nine could only be partially calculated. Indicators that can only be partially calculated with an existing data source typically refer to data sources that may only report results for some (e.g. only FPs/GPs) but not all PHC providers. An additional 12 indicators could be fully or partially calculated by modifying current questions in existing data sources, if data source holders agree to making the required changes.

There is no existing pan-Canadian data source for 75 of the indicators. Calculating them would require the development of new data sources or significant expansion of an existing survey or administrative database. For example, an additional 55 indicators could be calculated by obtaining support from data holders to expand the National Physician Survey (n = 26), the Canadian Community Health Survey (n = 17) or to enhance fee-for-service physician billing data (with other clinical, diagnostics, drug and lab data) (n = 12).

Figure 2 shows the types of new clinical administrative and other administrative data sources that would be required to report the PHC indicators.

**FIGURE 2: New Clinical Administrative and Other Administrative Data Sources Required for PHC Indicators**



Although significant modifications to existing data sources would enable the calculation of many additional PHC indicators, experience suggests that large-scale changes to these established data sources can be difficult to negotiate due to the impact on the existing data sources.







## 3.0 How Can We Access the Information?

This section includes findings from the gap analysis:

- 18 PHC indicators that can be calculated fully or partially with an existing pan-Canadian survey or administrative data source;
- 12 PHC indicators that can be calculated fully or partially if modifications can be made to existing pan-Canadian survey questions;
- 75 PHC indicators that require the expansion of an existing pan-Canadian data source (n = 55) or the development of a new data source (n = 20); and
- Options for collecting data to report PHC indicators.

The analysis of the data requirements for the PHC indicators is organized by type of data source (i.e. client/patient or population survey data, provider survey data, organization survey data, clinical administrative data, and other administrative data) addresses the questions listed below for each source. Additional information for each question is provided below.

### ***What Are the Indicators Meant to Measure?***

This section specifies the areas of primary health care that the indicators will be measuring (e.g. prevention and promotion, satisfaction with PHC care).

### ***What Data Sources Exist Today?***

This section provides an overview of PHC related data sources that currently exist.

This section also identifies PHC indicators with and without a current pan-Canadian data source, by specifying if an indicator can be fully or partially calculated and/or if a data source would need to be modified or expanded to support indicator reporting.

Indicators that *can be fully calculated with an existing data source* and be reported at a health region or higher level of aggregation.

Indicators that *can only be partially calculated with an existing data source* refer to data sources that may only report results for some but not all PHC providers (for example FPs/GPs only).

Indicators that *could be calculated if an existing data source is modified* refer to changes that must be made to current questions in an existing survey.

Indicators that *could be calculated if an existing data source is expanded* refer to new survey questions that must be added to an existing survey.



### ***What Are the Challenges Associated With Collecting This Type of Data?***

This section describes the challenges that currently exist in data collection, calculation, and/or reporting of the PHC indicators.

### ***What Are the Potential Options for Collecting This Type of Data?***

This section provides options for enhancing the data collection infrastructure related to this type of data source so it produces the data required to calculate and report the related PHC indicators.

## **3.1 Client/Patient or Population Level Data**

Client/patient/population data can be captured through a range of survey options. The Canadian Community Health Survey (CCHS) is a high quality pan-Canadian survey that has the potential to provide data for several of the indicators.

Up to 31 of the PHC client/patient or population indicators could be calculated by modifying and expanding the Canadian Community Health Survey (CCHS). More specifically:

- Six indicators can be calculated fully with the survey;
- Three indicators can be calculated partially (only for FPs/GPs providing PHC);
- Five indicators could be calculated with modifications to existing survey questions; and
- Seventeen indicators could be calculated if questions were added to the core or special theme sections of the CCHS.

Options for enhancing the data collection infrastructure in this area:

1. Modification and expansion of the CCHS.
2. Development of existing and new PHC client/patient and population-based surveys.

### ***What Are the Indicators Meant to Measure?***

PHC client/patient/population level data are intended to provide information for a range of areas that include, but are not limited to:

- access to PHC providers;
- client/patient satisfaction with care;
- chronic disease management in PHC;
- delivery of PHC services to clients/patients; and
- provision of whole-person PHC services.



***What Data Sources Exist Today?***

Canada has a range of population-based surveys, including the Canadian Community Health Survey (CCHS), which could provide some of the additional data required to report PHC client/patient indicators. These data are often available at a health region level and, in some cases, increased sample sizes can be purchased by health regions.

The CCHS collects data on the economic, social, demographic, occupational and environmental correlates of health in order to increase understanding of the relationship between health status and health care utilization. The CCHS provides cross-sectional estimates of health determinants, health status and health system utilization for all health regions across Canada. The uniqueness of CCHS arises from the regional nature of both content and survey implementation. These aspects allow for analysis of health data at a regional level, across Canada.

The CCHS is currently being updated by Statistics Canada. Sections related to client/patient satisfaction and access may be represented as “theme” content in future versions of the survey and will likely not be part of “core” content. Unlike core content, which will be continually collected, theme content will likely only be included periodically. Core content will likely continue to include health risk behavior questions (e.g. smoking, alcohol drinking) related to indicators on health risk behaviours and access to a regular PHC provider and/or health team. Future development may include a theme module on chronic disease management.

In addition to the CCHS, there are other Canadian and international population-based surveys that can provide information on PHC. However, these sources typically do not have the sample frame or size required to allow for reporting at the health region level across Canada. These sources may be useful for augmenting the range of indicators that can be reported through CCHS.

The following table includes six client/patient or population-based PHC indicators where there is an existing pan-Canadian data source, (i.e. CCHS).

**TABLE 2: Client/Patient or Population-Based Indicators Available With Existing Data Source**

<b>INDICATOR NUMBER</b>	<b>INDICATOR LABEL</b>
20	Smoking rate
21	Fruit and vegetable consumption rate
22	Overweight rate
23	Physical activity rate
24	Heavy drinking rate
74	Client/patient satisfaction with telephone health lines



The following three client/patient or population based PHC indicators can be partially calculated for individuals who receive PHC (i.e. scope of question is limited to FPs/GPs). The indicators could be fully calculated if modifications could be made to the CCHS to obtain information about PHC providers beyond FPs/GPs.

**TABLE 3: Client/Patient or Population Based Indicators Partially Available With Existing Data Source**

INDICATOR NUMBER	INDICATOR LABEL
1	Population with a regular PHC provider
14	Smoking cessation advice in PHC
73	Client/patient satisfaction with PHC providers

The following five client/patient or population based PHC indicators could be calculated from an existing pan-Canadian data source if modifications could be made to existing questions in the CCHS.

**TABLE 4: Client/Patient or Population Based Indicators Available With Modifications to Existing Data Source**

INDICATOR NUMBER	INDICATOR LABEL
2	Difficulties accessing routine PHC
3	Difficulties accessing PHC health information or advice
4	Difficulties accessing urgent, non-emergent PHC
29	Difficulties obtaining urgent, non-emergent PHC on evenings and weekends
94	Access to interdisciplinary PHC organizations

The 17 indicators that require an expanded or new data source for client/patient or population level data are provided in the following table. There may be an opportunity in the future to add questions to the CCHS related to eight of the indicators in the following table as part of the periodically recurring “theme” content on chronic disease management (13, 15–17, 25–28). The remaining indicators could also be proposed for inclusion as theme content within CCHS, perhaps as a specialized PHC module.



**TABLE 5: Client/Patient Level Indicators Requiring Expanded or New Data Source**

INDICATOR NUMBER	INDICATOR LABEL
13	Health risk screening in PHC
15	Alcohol consumption advice in PHC
16	Dietary advice in PHC
17	Advice on physical activity in PHC
25	PHC resources for self-management of chronic conditions
26	PHC support for informal caregivers
27	Time with PHC provider
28	Client/patient participation in PHC treatment planning
33	Satisfaction with wait times for urgent, non-emergent PHC
34	Satisfaction with wait times for routine PHC
71	Information about prescribed medication by PHC providers
75	Recommendation of PHC provider to others
76	Client/patient participation in PHC clinical decision making
77	Client/patient satisfaction with PHC privacy practices
78	Language barriers when communicating with PHC providers
82	PHC client/patient experiences with duplicate medical tests
98	Client/patient satisfaction with available PHC services

***What Are the Challenges Associated With Collecting This Type of Data?***

There are a number of considerations and potential issues related to the use of surveys for collecting PHC client/patient level data.

**Timeliness and relevance**—Although a pan-Canadian survey could be utilized to report some of the indicators, there may be a delay of two years between the time the data are collected and reported. This factor may have a negative impact on the relevance and usefulness of the information.

**Level of reporting**—The current pan-Canadian CCHS sampling frame would restrict the level of reporting to the health region level. If necessary, local surveys could be developed to collect additional patient/client data at the PHC organization level.

**Sampling frames**—Sampling frames will need to be developed for any new PHC client/patient level surveys.



**Development and testing**—Significant time and effort is required to develop, test and validate new survey instruments. Modifying existing surveys may require less time but may also involve a testing and validation process. Building on existing surveys, especially CCHS, offers many advantages. Limiting the number of questions added can reduce the burden of making changes to existing surveys while still providing the data needed for some but not all of the relevant indicators.

### ***What Are the Potential Options for Collecting This Type of Data?***

#### **1. Modification and expansion of the Canadian Community Health Survey—**

Enhance and expand both core and theme content within the CCHS, based on the PHC client/patient and population indicators. A small number of indicators on health risk behaviour and access to a regular PHC family doctor can currently be derived from the CCHS. In addition, some PHC satisfaction and access related data can be obtained from optional content collected at a sub-sample level.

Using the CCHS as a primary source for PHC client/patient/population data would build on an already existing, valid and tested pan-Canadian survey. Content from the CCHS would support health region level reporting and expanded sample sizes for regions are available. It may also be possible to add a voluntary person identifier to allow for linkages to other PHC related information.

The CCHS's current focus on health status does not necessarily make it amenable to further expansion to include questions on client/patient utilization of PHC services as core content. However, there may be opportunities to obtain data to calculate PHC client/ patient perspective indicators in periodically recurring theme content within the CCHS. Relevant theme content will likely only be included periodically within the CCHS.

Current sections of the CCHS that may in future become theme content include PHC access and satisfaction. Data from these modules could be used to report the related indicators. Over the long term, a chronic disease management theme module may be introduced, and could also be used to report related PHC indicators. A specialized PHC theme module would likely be needed to obtain data to report the remaining nine client/patient indicators. Currently, Statistics Canada is undertaking a review to determine what will be included as core and theme content in a future version of the CCHS.

Future consultations with Statistics Canada, regarding proposed content of the CCHS would be required if it is considered a priority for enhancing the PHC data collection infrastructure. It will take time to develop and test any changes or additions of PHC content to the CCHS. In addition, it should be noted that PHC organization level data would not be collected by the CCHS.



- 2. Development of a practice-based PHC client/patient survey**—Create a new client/patient survey instrument, or adapt an existing one. It could be administered annually or biannually using a random sample of PHC practices' clients/patients.

The data required for generating PHC indicators could be built into a new survey, which could be reported at a practice or higher level. This type of survey would provide more relevant and useful information for PHC organizations, but it would be costly to implement. As an interim solution, it could be administered on a voluntary basis. Survey instruments used in other jurisdictions or provinces/territories could be used or adapted, if necessary. Once a survey instrument is developed or adapted, the next challenge is to develop a sampling frame. An organization registry may also be useful if the sample is to be practice rather than population-based. A survey of PHC practice clients/patients would require PHC organization support and would likely be implemented by local stakeholders.



## 3.2 Provider Level Data

Provider level data can be captured through a range of survey options. The National Physician Survey (NPS) is a high quality pan-Canadian survey that has the potential to provide data for several of the indicators.

Up to 15 of the PHC provider indicators could be calculated fully or partially (i.e. only for FPs/GPs) by modifying and expanding the NPS. Specifically:

- Two indicators can be calculated fully with the survey;
- Four indicators can be calculated partially with the survey (i.e. only for FPs/GPs);
- Four indicators can be calculated partially with modifications to existing survey questions; and
- Five indicators can be calculated partially if additional survey questions are added.

Five provider level indicators could be calculated partially (refer only to RNs) by modifying the National Survey of the Work and Health of Nurses (NSWHN). Further additions to this survey could potentially allow for reporting of all provider level indicators for RNs.

Options for enhancing the data collection infrastructure in this area:

1. Modification and expansion of the NPS.
2. Expansion of the NSWHN.
3. Development of a National Provider Survey.
4. Development of local PHC provider practice-based surveys.

### ***What Are the Indicators Meant to Measure?***

PHC provider level indicators are intended provide information for a range of areas that include, but are not limited to:

- composition, nature and extent of PHC provider teams;
- characteristics of PHC provider payment models;
- PHC provider satisfaction with work and characteristics of work environment; and
- PHC provider work-life balance.

PHC providers comprise a wide range of health professionals. They include but are not limited to physicians, nurses, nurse practitioners, nutritionists, pharmacists, physiotherapists, psychologists and social workers. These providers function in a range of PHC organization models from solo practice to networks and interdisciplinary teams. Enhanced data sources would be required to calculate the indicators related to the range of PHC providers who work in a variety of PHC settings.





### ***What Data Sources Exist Today?***

The pan-Canadian/provincial/territorial scan identified that Alberta, Manitoba, New Brunswick, Newfoundland and Labrador, Nunavut, Ontario and Saskatchewan are collecting data on some of the activities of a few non-physician providers. While these sources may provide the data required for some of the provider-level indicators, additional development and coordination across jurisdictions would be required to use these for the pan-Canadian reporting of the provider level indicators. The National Physician Survey (NPS) is a comprehensive survey mailed to all licensed physicians in Canada, residents, and medical students. It collects information on what physicians in Canada are currently doing in their practice as well as their own areas of interest, concerns, and career plans. This survey is conducted every three years. Types of data collected include: provider education and demographics; work setting; clinical practice profile; time allocation; professional income; access to care; changes to practice; professional satisfaction; and information technology. The 2004 NPS achieved a 36% response rate, but given that this is a survey of all physicians the sample size is large enough to be used for provincial/territorial level estimates for many indicators. Efforts are underway to increase the response rate in future surveys, starting in 2007.

The National Survey of the Work and Health of Nurses (NSWHN) is jointly administered by Statistics Canada, Health Canada and CIHI to a sample of registered nurses, licensed practical nurses and registered psychiatric nurses across Canada. The survey aims to identify relationships between selected health outcomes, the work environment and work life experiences of the three types of practicing nurses in Canada. The NSWHN is a 30-minute telephone survey conducted by Statistics Canada. Participation in the survey is voluntary. Data collection ran from October 3 to December 17, 2005. The results are scheduled for release in the fall of 2006. The survey will initially be administered only once, but may have the potential to be administered again in the future.



Table 6 lists indicators that can be fully calculated using existing data for FPs/GPs from the NPS.

**TABLE 6: Provider Level Indicators Available With Existing Data Source**

INDICATOR NUMBER	INDICATOR LABEL
95	PHC physicians working in solo practice
96	PHC physicians working in group practice

Table 7 lists indicators that can be partially calculated using existing data for FPs/GPs alone from the NPS. Two of the indicators (90, 92) listed below could also be calculated for nurses if the NSWHN could be used as a data source with some modifications. Pan-Canadian data sources for other PHC providers are not available.

**TABLE 7: Provider Level Indicators Partially Available With Existing Data Source**

INDICATOR NUMBER	INDICATOR LABEL
90	PHC workplace injuries
92	PHC provider satisfaction with work-life balance
104	PHC provider remuneration method
105	Average PHC provider income by funding model

The following table includes provider level PHC indicators where there is an existing data source that could be modified to support indicator reporting, but only for FPs/GPs through changes to NPS questions. Two indicators (91, 97) could be reported for RNs if existing questions in the NSWHN could be amended.

**TABLE 8: Provider Level Indicators Partially Available With Modifications to Existing Data Source**

INDICATOR NUMBER	INDICATOR LABEL
72	Professional development for PHC providers and support staff
88	PHC provider satisfaction with use of professional skills
91	PHC provider burnout
97	PHC FPs/GPs/NPs working in interdisciplinary teams/networks



Table 9 includes provider level indicators that require expansion of existing or development of new data sources. There are no existing or related survey questions in the NPS or NSWHN for these indicators, with the exception of indicator 89 that has similar questions in the NSWHN.

**TABLE 9: Provider Level Indicators Requiring Expanded or New Data Source**

INDICATOR NUMBER	INDICATOR LABEL
67	PHC support for medication incident reduction
83	Unnecessary duplication of medical tests reported by PHC providers
84	Point of care access to PHC client/patient health information
89	PHC workplace safety
99	PHC team effectiveness score

***What Are the Challenges Associated With Collecting This Type of Data?***

There are a number of considerations and potential issues related to the use of surveys for PHC provider level data:

**Burden of survey data collection**—Response rates to surveys may decline if additional requirements and/or content are added to existing surveys. Better results might be obtained by replacing a number of questions on a current survey or to customise it for PHC rather than adding questions, which will increase the overall length and time to complete. Limiting the number of questions added is another way to capture data needed for some but not all of the indicators.

**Comprehensiveness of data sources**—Many PHC provider types are not covered by current data sources and many of the indicators can only be reported for physicians. Little data are available for other provider groups (e.g. nurses, occupational therapists, pharmacists and physiotherapists).

**Sampling frames**—Working with professional licensing and regulatory bodies has the potential to facilitate access to sampling frames. This approach has been used in New Zealand.

**Development and testing**—Significant time and effort is required to develop, test and validate new survey instruments. Modifications to existing surveys may require less time but also require a testing and validation process.



### ***What Are the Potential Options for Collecting This Type of Data?***

- 1. Modification and expansion of the NPS and the NSWHN**—Explore opportunities to incorporate modifications and expansions to the short and long versions of the NPS in order to capture the data required to report the relevant PHC provider indicators. The NPS is administered every three years, so it can provide an ongoing source of information. A small number of PHC provider indicators on FP/GP practice setting can currently be fully derived from the NPS. Efforts could be made to capture some of the new PHC indicator data in the 2007 cycle of NPS. The NSWHN is a one-time survey, so it will only provide data for a single point in time for a small number of indicators. Therefore, the majority of the efforts should be focused on the NPS.

Changes to these data sources need to be negotiated with the appropriate stakeholders. The NPS option only allows for partial reporting of the PHC provider indicators, as information on non-physician PHC providers is currently limited. In addition, modifications to existing surveys, such as the NPS, would result in added content thus increasing the burden to respondents and potentially reducing the response rate. A subset of the PHC provider indicators could be prioritized for inclusion in an effort to minimize the impact of adding questions to existing sources.

- 2. Development of a National Provider Survey**—Create a new PHC provider survey instrument and administer it to a sample (or census) of PHC providers every few years. The benefits to developing a new survey include customizing it for PHC, the range of PHC providers, and the specific PHC indicators. There is also an opportunity to leverage some of the work currently underway to develop health human resource databases for pharmacists, physiotherapists, occupational therapists, medical laboratory technologists and medical radiation technologists. However, commitment, collaboration and funding from a broad range of stakeholders would be required to develop and implement such an initiative. For example, accessing human resources data may require agreements with the regulatory and licensing bodies of PHC provider groups. Although there are no current sampling frames for non-physician and non-nursing groups, agreements with regulators could provide access to provincial/territorial registers of licensed providers. In light of the challenges and scope of this type of initiative, an initial focus on enhancing the NPS may be preferable.



Another option to consider is development of a PHC provider module to use in conjunction with the census surveys that some of the professional associations currently use. This would require working with the professional associations to consider the possibility of adding a number of questions to their surveys that are specifically related to PHC. Some professional associations have expressed interest in exploring this option. However, there may be difficulty accommodating enough questions to address the required PHC content. In addition, in some jurisdictions there is no mandatory licensing and registration of some health professionals. Associations typically do not have mandatory membership. This would restrict the sample frame for the professional groups that only have voluntary membership.

- 3. Development of local PHC provider practice-based surveys**—Many local PHC provider surveys are underway or being developed. These initiatives could benefit by taking a common approach to measurement and working towards the collection of the comparable data required to report the PHC provider indicators. The advantage of local PHC provider practice-based surveys is that they provide information at the practice level and for PHC providers working together.

### 3.3 Organization Level Data

Organization level data can be captured through a range of survey options. The National Physician Survey (NPS) is a high quality pan-Canadian survey that has the potential to provide data for several of these indicators.

Up to 21 of the PHC organization indicators could be calculated partially (i.e. for FPs/GPs) by expanding the National Physician Survey (NPS). Specifically:

- Two indicators could be calculated partially with the survey;
- Thirteen indicators could be calculated partially with modifications to existing survey questions; and
- Six indicators could be calculated partially if additional survey questions are added.

Options for enhancing the data collection infrastructure in this area:

1. Modification and expansion of the NPS.
2. Development of a PHC organization survey and registry.
3. Development of a practice-based PHC organization survey.



### ***What Are the Indicators Meant to Measure?***

PHC organization level indicators are intended to provide information for a range of areas that include, but are not limited to PHC organizations:

- accessibility and availability of PHC services;
- coordination and collaboration of PHC services;
- planning and delivery of PHC programs and services;
- structures and processes to ensure quality and safety (e.g. maintaining medication and problem lists, medication management, reporting of medical errors); and
- use of information systems.

### ***What Data Sources Exist Today?***

There were no comparable, consistent, comprehensive data sources identified for PHC organization indicators at a pan-Canadian level. Prince Edward Island reported that they regularly administer an organization-level survey to community health centres.

All 23 PHC organization level indicators require a new or expanded data source to be fully reported. However, most of organization level indicators could be partially calculated through the National Physician Survey (NPS) (see provider level data section for a description of the NPS). The NPS could provide information from the perspective of physicians who work in solo PHC practices. By grouping responses of physicians working in the same location we could potentially also obtain information on group practice settings as well. Organization level data from community health centres, and large PHC networks would probably be better derived through a survey of senior managers or medical staff in these organizations, but a similar set of questions could be asked.

The following table includes the two PHC organization level indicators that could be partially (for solo physician and group practices) derived from existing NPS questions using data from existing survey questions. Additionally, 13 PHC organization level indicators could be partially (i.e. for FPs/GPs) derived from the NPS by modifying existing questions. A further six PHC organization level indicators could be partially (i.e. for FPs/GPs) derived by adding new survey questions to the NPS.



**TABLE 10: Organization Level Indicators Requiring Expanded or New Data Source**

<b>INDICATOR NUMBER</b>	<b>INDICATOR LABEL</b>
<b>Organization Level Indicators Partially Available Through Existing NPS Survey Questions</b>	
80	Collaborative care with other health care organizations
87	PHC organizations accepting new clients/patients
<b>Organization Level Indicators Partially Available Through Modifications to Existing NPS Survey Questions</b>	
5	PHC needs-based planning
6	PHC client/patient registries for chronic conditions
7	PHC programs for chronic conditions
9	PHC outreach services for vulnerable/special needs populations
10	Specialized programs for PHC vulnerable/special needs populations
11	Support for PHC vulnerable/special needs populations
12	Scope of PHC services
18	PHC initiatives for reducing health risks
30	PHC after hours coverage
31	Average number of PHC extended hours
68	Use of medication alerts in PHC
81	Intersectoral collaboration
100	Uptake of information and communication technology in PHC organizations
<b>Organization Level Indicators Partially Available Through Additions to NPS Survey</b>	
8	Community input for PHC planning
69	Implementation of PHC clinical quality improvement initiatives
70	Maintaining medication and problem lists in PHC
79	Use of standardized tools for coordinating PHC
101	Use of information and communication technology modalities in PHC organizations
102	Use of two-way electronic communication in PHC organizations
<b>Other Organization Level Indicators With No Data Source</b>	
19	Health region programs for reducing health risks
93	Needs-based health human resource planning for PHC



### ***What Are the Challenges Associated With Collecting This Type of Data?***

The challenges associated with developing a new PHC organization-level survey include:

**Burden of Survey Data Collection**—Response rates to existing surveys may decline with the addition of new survey questions or new surveys. Respondents to a PHC organization survey may already be completing other surveys, such as the NPS, and as a result be less inclined to take the time to respond to an additional survey. This is another reason that opportunities to build on existing data sources can be advantageous.

**Sampling frames**—A sampling frame would need to be established for a PHC organization-level survey. However, there is currently no list of PHC organizations from which to develop a sampling frame.

**Development and testing**—Significant investments of both time and effort are required to develop, test and validate new survey instruments.

### ***What Are the Potential Options for Collecting This Type of Data?***

**1. Modification and expansion of the NPS**—Explore opportunities to adapt the National Physician Survey to include questions that will provide the data required to calculate some of the PHC organization indicators, in the short term. This survey module could be directed to all PHC-based FPs/GPs with a request to provide responses for the PHC organizations that they work in (e.g. solo practice, group practice, interdisciplinary teams). This approach would require input and support from the stakeholders engaged in the NPS.

In tandem to this approach, a comparable survey could be implemented by community health centres or other large PHC organizations.

**2. Development of a PHC organization survey and registry**—Explore opportunities to develop a new PHC organization survey administered every few years. This option assumes a registry for PHC organizations will be established. The development of a PHC organization registry, with unique identifiers, would provide a sample frame for a sample or census survey of PHC organizations.

**3. Development of local practice-based PHC organization surveys**—Local PHC survey initiatives could be encouraged to capture comparable data from PHC organizations that could be used to calculate the relevant indicators. These activities could be linked with similar activities at the PHC provider level, if that option is also being pursued.





### 3.4. Clinical Administrative Data

The clinical administrative data collection infrastructure is less developed than the areas described above, but the information is equally important given that it relates to the quality of PHC.

Few of the PHC clinical administrative indicators have an available pan-Canadian data source:

- One indicator can be calculated using data from the Hospital Morbidity Database;
- Three indicators can be partially derived using data from the Discharge Abstract Database or Hospital Morbidity Database and National Ambulatory Care Reporting System; and
- Twelve indicators could potentially be partially calculated by expanding fee-for-service physician claims, drug, diagnostics and laboratory data.

Options for enhancing the data collection infrastructure in this area:

1. Development of comparable data content and coding standards for use in electronic medical records and the future integrated electronic health record.
2. Expansion and modification of fee-for-service physician claims data and available drug, diagnostics and laboratory data. Fee-for-service data development may not be feasible.
3. Development of a PHC client/patient/population health services survey.
4. Implementation of a PHC quality study or development of a PHC clinical registry.

#### ***What Are the Indicators Meant to Measure?***

PHC clinical administrative level data are required to measure the following:

- acute events associated with specific conditions;
- preventive care and screening; and
- processes and outcomes of care for specific conditions.

The following types of PHC encounter-based/person-level data would be needed to calculate the relevant indicators:

- demographic data;
- diagnostic information;
- laboratory and diagnostic imaging services data;
- medication/prescription data;
- procedures/interventions/services;
- reason for PHC encounter; and
- referral data.



### ***What Data Sources Exist Today?***

A list of key provincial and pan-Canadian clinical administrative data sources is provided below. Appendix C contains descriptions of these data sources.

- Discharge Abstract Database (DAD)—receives data on hospital discharges from all hospitals in every province and territory except Quebec.
- Hospital Morbidity Database (HMDB)—contains data on cases separated (discharge or death) from a hospital, by primary diagnosis, for all provinces and territories.
- Physician claims data—collected in all provinces and territories, these data include unique client/patient identifier, age, gender, residence code, diagnosis and fee code. These databases differ across jurisdictions.
- Drug claims data—drug databases exist in all provinces and include information on drugs prescribed, the Drug Identification Number and additional data. These databases differ across jurisdictions.

Several new and developing pan-Canadian data sources have the potential to provide relevant clinical administrative data in the future. These include:

- National Prescription Drug Utilization Information System (NPDUIS)—CIHI
- National Ambulatory Care Reporting System (NACRS)—CIHI
- National Diabetes Surveillance System (NDSS)—Public Health Agency of Canada, Provinces/Territories
- Canadian Immunization Registry Network (CIRN)—Health Canada

Additionally, under a current CIHI project a unique identifier strategy for health providers across Canada is being developed. This project will initially consist of two phases: a discussion paper that will serve as the basis for assessing the Canadian need for National Unique Identifiers, and a stakeholder workshop to explore options for the implementation of National Unique Identifiers.

Some provinces have also begun implementing a common unique personal identifier and client registry system to support integrated regional and provincial health information.

International studies of quality in PHC provide examples of possible strategies for the collection of encounter-based person level data either through snapshot quality studies or ongoing PHC online registries. These studies focus on quality care for common conditions and the reasons that people seek care in PHC settings. Three approaches are described below.



### ***Quality Study—Population-based Interviews and Chart Audit***

#### ***The Quality of Health Care Delivered to Adults in the United States<sup>9</sup>***

The objective of this study, led by McGlynn et al. and RAND Health, was to assess the extent to which recommended processes of medical care (one critical dimension of quality) are delivered to a representative sample of the U.S. population for a broad spectrum of conditions. A component of the project included the development of indicators of quality. A total of 439 indicators for 30 conditions and preventive care were used to conduct the quality assessment in this study. Another component of this study was the collection of related primary health care data required for the study. Participants were recruited from 12 metropolitan areas across the U.S. using random-digit-dial telephone surveys. The researchers recruited enough participants to assess how structural characteristics in each market (e.g. the penetration of managed care) affect patterns of access to and utilization of health services. Data collection was completed using two methods— a telephone health history interview and an audit of medical records. Adults who had had visits to a health care provider during the previous two years were eligible. Written consent was obtained from participants in order to access their medical records.

A health history interview, conducted by telephone, took an average of 13 minutes to complete. The study used registered nurses to abstract patient charts. The average time required to abstract a chart for a participant-provider dyad was 50 minutes. Inter-rater reliability was tested with results ranging from substantial to almost perfect. Overall findings from this study indicate that over 30% of patients did not receive all of the recommended primary care and, therefore, there is room for improvement in quality.

### ***Quality Study—Organization-based Quality Study***

#### ***Measuring General Practice—A demonstration project to develop and test a set of primary care clinical quality indicators in the U.K.<sup>10</sup>***

The Marshall, U.K., and RAND Health study was designed to develop and test a comprehensive set of clinical quality indicators for use in British primary care settings. The overall objective was to transfer expertise and specific measurement technologies from the U.S. to the U.K. It was conducted in partnership between the National Primary Care Research and Development Centre at the University of Manchester and RAND Health in Santa Monica.

The project was conducted in two phases:

1. Indicator transfer and adaptation
2. Indicator field testing



A total of 168 indicators were selected for 19 of the most common conditions presented in primary care settings (for acute, chronic and preventive care). These were field tested in two Primary Care Trusts (PCTs) in the U.K. The PCTs were selected to include two demographically contrasting regions.

Each practice randomly selected 100 patients for the study. An honorarium was paid to each practice. Data were collected using data abstraction forms over five months. This required manual extraction of data from paper and electronic patient records. The time for abstracting data for each chart ranged from minutes to over one hour. On average, 15–20 records could be completed in one day. To complete all 100 records in a practice, the average timeline was 7–10 days. Again the findings were that there was room for improvements in the quality of PHC.

***Quality Study—Practice-based Survey—Rolling Continuous***

***The BEACH Project—Bettering the Evaluation and Care of Health,<sup>11</sup>  
New South Wales, Australia***

The Australian General Practice Statistics and Classification Centre, which is a collaboration between the University of Sydney and the Australian Institute of Health and Welfare, is responsible for BEACH. BEACH was started in the 1990s. Data are recorded through a national physician survey of general practice activity. The data include information on patients seen, reasons people seek medical care, problems managed, and treatments provided. The collection of information is designed to provide general practice population estimates of the incidence and prevalence of conditions and risk factors. The database includes over 600,000 patient encounters collected over the past six years.

BEACH is considered a continuous survey with data collected from a rolling (changing) sample of GPs 50 weeks a year. The sample of GPs is taken from those currently billing Medicare, Australia’s publicly insured health system. GPs are rewarded with “quality assurance points” that they need to retain their recognition as general practitioners. Forms are submitted by the GPs on 100 consecutive patients. BEACH staff code the diagnostic data using the International Classification of Primary Care (ICPC).

These types of quality studies can provide one-time information on the quality of PHC in the absence of a fully developed data collection infrastructure.

Currently, only one of the clinical administrative PHC indicators (i.e. ambulatory care sensitive conditions) can be reported from an existing data source in Canada. CIHI’s Hospital Morbidity Database is the primary source for the above indicator. Pan-Canadian diagnoses and hospital admission data are readily available through this database.



**TABLE 11: Clinical Administrative Level Indicators Available With Existing Data Source**

INDICATOR NUMBER	INDICATOR LABEL
35	Ambulatory care sensitive conditions

The following three indicators can be partially derived by using existing National Ambulatory Care Reporting System (NACRS) and/or Discharge Abstract Database (DAD) data sources.

**TABLE 12: Clinical Administrative Level Indicators Partially Available With Modifications to Existing Data Source**

INDICATOR NUMBER	INDICATOR LABEL
36	Complications of diabetes
37	Emergency department visits for asthma
38	Emergency department visits for congestive heart failure

There are 29 indicators that require a new data source to support indicator reporting. Although some of these indicators, listed below, could be developed using client/patient survey data—such as influenza immunization rates—a clinical administrative data source is preferred for a variety of reasons.

**TABLE 13: Clinical Administrative Level Indicators Requiring Expanded or New Data Source**

INDICATOR NUMBER	INDICATOR LABEL
32	Wait time for urgent, non-emergent PHC
39	Glycemic control for diabetes
40	Blood pressure control for hypertension
41	Influenza immunization, 65 +
42	Pneumococcal immunization, 65 +
43	Well baby screening
44	Child immunization
45	Breast-feeding education
46	Depression screening for pregnant and post-partum women
47	Counselling on home risk factors for children
48	Colon cancer screening
49	Breast cancer screening



**TABLE 13: Clinical Administrative Level Indicators Requiring Expanded or New Data Source (cont'd)**

INDICATOR NUMBER	INDICATOR LABEL
50	Cervical cancer screening
51	Bone density screening
52	Dyslipidemia screening for women
53	Dyslipidemia screening for men
54	Blood pressure testing
55	Screening for modifiable risk factors in adults with coronary artery disease
56	Screening for modifiable risk factors in adults with hypertension
57	Screening for modifiable risk factors in adults with diabetes
58	Screening for visual impairment in adults with diabetes
59	Asthma control
60	Treatment of congestive heart failure
61	Treatment of dyslipidemia
62	Treatment of acute myocardial infarction
63	Antidepressant medication monitoring
64	Treatment of depression
65	Treatment of anxiety
66	Treatment for illicit or prescription drug use problems

Provincial/territorial physician fee-for-service claims data could potentially be used along with drug (from provincial/territorial data sources or NPDUIS) and laboratory data to calculate some of the clinical administrative PHC indicators if these data sources were enhanced and linkage across data sources was possible. One jurisdiction estimated that approximately 12 of the indicators in table 13 above, could be calculated using this as an approach.

***What Are the Challenges Associated With Collecting This Type of Data?***

A number of potential issues arise in relation to the collection of various kinds of clinical administrative data:

**Availability of drug databases**—Provincial/territorial level drug claim databases do not always include a common client/patient identifier that would facilitate comparisons with other datasets. Only British Columbia, Manitoba and Saskatchewan have population-based prescription drug data. Other jurisdictions have coverage that is restricted (e.g. to seniors or clients/patients on social assistance). Accessibility and cost of obtaining this data is variable.



**Completeness of physician fee-for-service claims systems**—Issues identified include completeness, accuracy of diagnostic information and comparability. The level of detail, (or “granularity”) of diagnostic or intervention related information needed for calculating indicators, is not commonly recorded using adequate data standards or codes to allow the data to be used for the PHC indicators.

**Consistency, standardization, and comparability**—Consistent use of agreed-upon content and technical standards is necessary for pan-Canadian comparability and reporting.

**Multiple data sources required**—Many of the indicators require multiple data elements from a variety of sources.

In some cases a portion of the data required might be available through existing sources (or by modifying existing sources). However, as the data sources for the remaining data elements do not currently exist, the indicator can only be partially calculated. An example of this is indicator 37 related to *% of PHC clients/ patients, ages 6 to 55 years, with asthma who visited the emergency department in the past 12 months*. This indicator would require data from the National Ambulatory Care Reporting System (currently existing data) in combination with PHC encounter based data required to determine the percent of PHC clients who have been diagnosed with asthma (data not currently existing at a pan-Canadian level).

### ***What Are the Potential Options for Collecting This Type of Data?***

- 1. Development of comparable data content and coding standards for the electronic medical record and evolving integrated electronic health record**—Explore opportunities to develop standards for use in existing PHC encounter-based information systems, National Prescription Drug Utilization Information System (NPDUIS), laboratory and diagnostic imaging data systems. Agreement on a defined clinical administrative data set for PHC encounter-based information would be useful.

This option has the potential to lead to additional comparable pan-Canadian PHC data. There has already been some investment in these types of systems at local and regional jurisdiction levels across Canada. If each of these systems eventually use common content standards, many of the indicators could be calculated and compared across regions. One of the disadvantages of this option is that existing systems may have to undergo modifications. There would also be resource implications for implementing future constant standards.



- 2. Expansion and modification of fee-for-service physician claims data and available drug, diagnostic imaging and laboratory data**—Explore opportunities to utilize and expand existing clinical administrative data from provincial/territorial fee-for-service physician claims, the NPDUIS or provincial drug data sources, and laboratory and diagnostic imaging information systems. Provincial billing systems would need to be modified to maximize the value of this approach and these types of changes are known to be difficult to implement. The advantage of using adapted physician fee-for-service claims data is that they would be captured as a by-product of existing data collection streams and can be linked to drug and laboratory data. If successful, this could become part of the provincial/territorial National Physician Database submissions. However, because some are physicians not remunerated by fee-for-service, there may be potential gaps in the data even if these changes are made.
  
- 3. Development of a PHC client/patient/population survey on health services utilization**—Explore opportunities to develop a new PHC practice-based client/patient/population self-report survey to capture information about PHC services received. The survey could be administered via a random sample of PHC practice populations or through a population-based health services survey.

Although this option could take less time to develop than others there may be problems with the accuracy, response rate and completeness of self-reported data. In addition, these data would not provide comparability of the health of the individual over time.

- 4. Implementation of a PHC quality study and/or PHC registry**—The following approaches for obtaining PHC quality information are possible:
  - a. A population-based quality study would entail implementing the approach used by McGlynn et al., using chart abstractions of PHC records from a random population sample. Please see previous section in this report for more information about this approach.
  - b. A PHC practice-based quality study (Marshall/RAND approach) or an ongoing PHC registry would involve collecting data from PHC records from a sample of patients from a sample of PHC organizations. Please see previous section in this report for more information about this approach.
  - c. A PHC practice-based quality study using a BEACH type survey which collects cross-sectional data from a rolling sample of PHC providers on sequential client/patient encounters (e.g. 100 patient encounters per practice). Please see previous section in this report for more information about this approach.





Quality based studies have a number of advantages. They do not require an extensive technology infrastructure and there is a limited burden on participating PHC providers. However, the snapshot characteristic of quality studies is a limitation. A voluntary PHC registry has the potential to provide an ongoing source of data, but it's also associated with ongoing costs.

### **3.5 Other Administrative Data**

The PHC indicators that could be calculated from other administrative sources have few available pan-Canadian data sources.

Two indicators could be partially calculated using data from Scott's Medical Database and the National Physicians Database.

Options for enhancing the data collection infrastructure in this area:

1. Utilization of Scott's Medical Database and the National Physician Database.
2. Enhancement of existing and developing Health Human Resource Databases.
3. Management Information System (MIS) guidelines for PHC expenditures.

#### ***What Are the Indicators Meant to Measure?***

Other administrative level data are required to measure the following:

- health human resources and
- expenditures for providing PHC at various levels.

#### ***What Data Sources Exist Today?***

The following existing or developing pan-Canadian data sources either currently provide, or have the potential to provide, health human resources related data for certain PHC provider groups. Appendix C contains descriptions of these data sources.

- Scott's Medical Database (formerly referred to as Southam Medical Database)
- National Physician Database (NPDB)
- Health Human Resources Databases Development Project (HHR-DDP)
- Registered Nurses Database (RNDB)
- Licensed Practical Nurses Database (LPNDB)
- Registered Psychiatric Nurses Database (RPNDB)
- Health Personnel Database (HPDB)



A health human resources initiative, the Health Human Resources Databases Development Project (HHR-DDP), currently underway at CIHI, has the potential to provide data to report PHC indicators. The Health Human Resources Databases Development Project will help address information gaps by developing new country-wide, supply-based databases and reporting systems for five regulated health professions: Occupational Therapy, Pharmacy, Physiotherapy, Medical Radiation Technology and Medical Laboratory Technology. These five new databases will support health human resource monitoring and evaluation, planning, research and policy activities by providing a new source of timely, quality information about these groups of health professionals.

The following table lists the three PHC indicators that require a non-clinical administrative data source. In order to fully calculate these indicators new data sources would need to be developed or existing data sources would need to be expanded. Two of the indicators (85 and 86) could be partially calculated for FPs/GPs using the Scott’s Medical Database and the National Physician Database.

**TABLE 14: Other Administrative Level Indicators**

INDICATOR NUMBER	INDICATOR LABEL
85	PHC provider full time equivalents
86	PHC providers entering/leaving the workforce
103	Average per capita PHC operational expenditures

***What Do We Need to Collect the Data?***

Collecting these data will require:

- enhanced health human resource data sources for some PHC provider groups and new data sources for other provider groups; and
- financial data on health expenditures in PHC.



***What Are the Challenges Associated With Collecting This Type of Data?***

The challenges associated with the collection of other administrative data needed for reporting PHC indicators include:

- Collecting consistent comparable data on the numerous groups of health care professionals providing PHC-related services will require considerable effort and coordination.
- Obtaining agreement on data content standards could be a multi-year multi-phase process requiring a significant level of involvement and commitment by multiple stakeholders.

***What Are the Potential Options for Collecting This Type of Data?***

1. **Utilization of Scott’s Medical Database and National Physician Database**—Utilize Scott’s Medical Database and National Physician Database to provide limited health human resource data. Data would be limited to FP/GP counts and full-time equivalents.
2. **Enhancement of existing and developing Health Human Resource Databases**—Enhance submissions to CIHI’s existing Registered Nursing Database (RNDB), Licensed Practical Nurses Database (LNDB) and developing Health Human Resource Database Development Project (HHR-DDP) to obtain data to calculate full-time equivalents and inter-provincial movement for non-physician provider groups. Currently, most health human resource data is primarily available for physicians through either the Scott’s Medical Database, National Physician Database or National Physician Survey. Enhancing the HHR databases would provide data for additional PHC provider groups such as pharmacists and occupational therapists.

The advantage to this approach is that it would utilize a pan-Canadian data source already in development. However, this option would not provide data on the PHC health professional groups not included in the CIHI HHR databases. Enhancements to submissions from provincial professional bodies could help in the estimation of full-time equivalents and tracking the inter-provincial/territorial movement of providers. Currently, worked hours and unique identifiers are not included in either the HHR or RNDB/LNDB minimum data sets. Agreement, support and cooperation to enhance submissions could lead to improved health human resource data.

3. **Development of Management Information System (MIS) guidelines for PHC expenditures**—Develop funding and expenditure data submission requirements using a sample of PHC organizations and expand the collection of these data to additional PHC organizations in the future. This approach would facilitate the development of agreed-upon requirements prior to collecting these data on a larger scale. Opportunities to expand the currently existing Canadian Management Information System (MIS) Database to incorporate PHC organizations could be investigated during the development stage.





## 4.0 What Are the Challenges?

This section elaborates key challenges for developing an enhanced pan-Canadian PHC data collection infrastructure. These include:

- a lack of agreed-upon pan-Canadian PHC data content standards;
- ensuring privacy and confidentiality requirements are met; and
- issues related to coordination, development and implementation of PHC data sources.

This section elaborates key challenges that will be faced in enhancing the pan-Canadian PHC data collection infrastructure to support indicator reporting.

### 4.1 PHC Data Content Standards

Common data content standards facilitate comparable reporting through the use of a common language and common unique identifiers. Agreed-upon pan-Canadian standards for administrative data have not yet been developed for primary health care. For PHC encounters, standards are needed for recording why individuals seek care, their multiple health problems, the presence of more than one diagnosis and results of interventions. These standards will support the reporting of the PHC indicators and may be useful for development of the content standards for the integrated electronic health record.

Some standards, such as classification systems in use in the acute care health sector, are well established across Canada. A “classification” groups like information into a limited number of mutually exclusive categories (and sub-categories) to organize it for easy retrieval and reference.<sup>12</sup> Classification systems such as the Canadian Enhancement of the International Statistical Classification of Diseases and Related Health Problems, 10<sup>th</sup> Revision (ICD-10-CA) and the International Classification of Primary Care, second edition (ICPC-2), for example, group together similar diseases or reasons for encounter respectively. Using a standard classification system such as ICPC or ICD-10-CA/CCI can support comparable indicator reporting.



“Terminology” is defined as *a set of terms representing the system of concepts of a particular subject field*<sup>13</sup> or *a collection of terms used in a particular discipline*.<sup>14</sup>

A relevant example of a terminology that can be used in PHC is SNOMED-CT (Systematised Nomenclature of Medicine—Clinical Terms). These codes are not limited to diagnostic and procedural codes. It also includes codes for symptoms, test results, screening, family history and other information. Using a standard terminology such as SNOMED-CT can also support comparable indicator reporting.

SNOMED was developed four decades ago by the College of American Pathologists to support storage and retrieval of medical data.<sup>15</sup> Key classifications and data sets were later mapped to SNOMED and in addition, various domain specific vocabularies (such as the laboratory related Logical Observations Identifiers Names) were also integrated into it.<sup>16</sup> In 1999, the U.K. Health Minister and a representative from the College of American Pathologists announced a joint venture to develop SNOMED-CT™, a combination of SNOMED-RT (Reference Terminology) developed in the United States and Clinical Terms version 3 (formerly known as the READ Codes) developed in the U.K.<sup>17</sup> READ codes are part of a comprehensive clinical coding system which covers medical terms and procedural and administrative terms.

SNOMED, which is a terminology/vocabulary, contains approximately 140,000 codes with a significant level of coding complexity.<sup>18</sup> SNOMED-CT™ is currently being considered as a possible standard for inclusion within Canada Health Infoway’s pan-Canadian electronic health record.<sup>19</sup>

A frequently cited classification in reference to PHC is the International Classification of Primary Care second edition (ICPC-2), a classification system for medical concepts relevant to primary care and family medicine. ICPC-2 is a biaxial system-based classification that incorporates three important elements of the health care encounter: reasons for encounter, diagnoses or problems, and process of care.<sup>20</sup> ICPC-2, as a classification system, has less than 1,000 codes.

The validity of ICPC has been confirmed by studies in various countries outside of Canada, particularly in reference to reasons for encounter.<sup>21</sup>

Some key informants in Canada and other countries suggested that ICPC may not be detailed enough for PHC, but it has been used in some other jurisdictions.

In some cases, standards can be complementary. For example, ICPC-2 has been successfully mapped to ICD-10. Also, ICPC-2 and SNOMED-CT can co-exist. The World Organisation of Family Doctors’ (WONCA) International Classification Committee is currently mapping ICPC-2 to SNOMED-CT.<sup>22</sup>



A customized product, the ENCODE-FM<sup>®</sup> (Electronic Nomenclature and Classification of Disorders and Encounters for Family Medicine), has been developed for use in an electronic health records system. ENCODE-FM assists with interfacing between ICPC-2 and ICD-10.<sup>23</sup>

There is a scarcity of PHC clinical administrative data captured in a consistent and standardized manner on a pan-Canadian basis. Common data content standards can be used to support the collection of comparable data required to calculate the PHC indicators and to support the development of an integrated electronic health information system.

## **4.2 Privacy and Confidentiality Requirements**

Safeguarding privacy and confidentiality involves many factors, including retention and destruction of documents, security safeguards, review and oversight of development of relevant policies and procedures, public communications, and the design of appropriate legislative and regulatory frameworks.<sup>24</sup> Issues related to privacy, confidentiality and associated legislation may affect the implementation of a data collection infrastructure. Most jurisdictions have drawn up new legislative and regulatory frameworks to safeguard privacy and personal information, or are in the process of doing so. A recently established *Pan-Canadian Health Information Privacy and Confidentiality Framework* has been developed to help harmonize provisions designed to protect personal health information.<sup>25</sup>

Legislation may restrict or set parameters regarding what data may be shared. The importance of submitting data to trusted organizations (i.e. entities considered independent and objective by providers and the general public) was emphasized during interviews with international PHC data collection experts. Safeguards to ensure adherence to privacy and confidentiality requirements should be part of initiatives intended to enhance the data collection infrastructure.

## **4.3 Coordination, Development and Implementation**

Enhancing the data collection infrastructure will require coordination, development, implementation and resources. Building on existing initiatives and sharing information across jurisdictions offers many advantages. Approaches that allow jurisdictions the flexibility to implement changes according to local needs and priorities while still working toward a common infrastructure may be the most feasible.







## 5.0 Options and Conclusion

### Summary of options:

- Explore opportunities to modify and expand existing pan-Canadian population-based and PHC client/patient surveys to support reporting of PHC client/patient level and provider indicators.
- Explore opportunities to modify and expand existing provider level and organizational level surveys to support reporting of provider level and organizational level indicators.
- Explore opportunities to obtain agreement on common PHC data content standards and variables that inform the content that are included in PHC-based electronic medical record and the future electronic health record to enable reporting of PHC clinical administrative indicators.
- Explore opportunities to enhance submissions to pan-Canadian health spending and health human resource databases to support calculation of indicators related to PHC spending and health human resources.

Although PHC plays a key role in health improvement and illness care, and is often the gateway to other health and human services,<sup>7</sup> at the present time, there is relatively little comparative information available about PHC at either pan-Canadian or local levels. This shortage of PHC information may limit the ability of decision-makers and policy makers to measure, manage and improve primary health care in Canada.

Enhancing the PHC data collection infrastructure across Canada is an important step to improving our ability to measure the current state of PHC and renewal initiatives. Ideally an enhanced infrastructure would incorporate consistent, standard, agreed-upon data captured from a variety of sources on a variety of levels. Information about PHC that is comparable over time and across participating jurisdictions could offer opportunities for stakeholders to access information from a variety of perspectives and to understand how they are doing, and how they compare to similar PHC organizations, health regions, or jurisdictions.

The proposed future vision for the pan-Canadian PHC data collection infrastructure focuses on enhancements to the following key data sources in order to obtain information on various dimensions of PHC:



DATA SOURCE TYPE	WHY INFORMATION IS REQUIRED
Client/patient or population-based survey data	To better understand client/patient experience, satisfaction with care, reduction in health risks, etc.
Provider survey data	To obtain provider perspectives regarding processes of care and working conditions (e.g. level of informational continuity of care, scope of practice, quality of work life).
Organization survey data	To measure PHC organizational attributes and structures such as 24/7 access, linkages with other health care organizations, etc.
Clinical administrative data	To examine processes and outcomes related to delivery of primary health care and PHC services.
Other administrative data	To obtain other contextual data that is essential to understanding PHC in Canada (e.g. expenditures for providing PHC, health human resources).

## 5.1 Options for PHC Data Collection Infrastructure Enhancement

The options presented below can be used by a broad range of stakeholders to enhance the PHC data collection infrastructure. It is recognized that this will be a long-term effort, taking advantage of existing and emerging opportunities to address key PHC information gaps.

### General Advice for Enhancing the PHC Data Collection Infrastructure:

- 1.1 Leadership and support will be important to ensure the effectiveness and relevance of initiatives intended to improve the PHC data collection infrastructure and improve the availability of the information required to manage PHC in Canada.
- 1.2 Maintain the momentum created through the PHC Indicator Development Project through partnerships that build on existing PHC activities.
- 1.3 Adopt a flexible and phased approach that respects the differences across jurisdictions and provider groups, and builds on leadership and opportunity. Consider initially focusing on the abridged list of 30 indicators or development of selected data sources, if opportunities emerge. In some cases, privacy sensitive record linkage, across multiple data sources at the record level, would reduce respondent burden and allow for the production of more meaningful analyses and reports.
- 1.4 Plan for, and where appropriate, pilot the recommended PHC data collection infrastructure enhancement options presented below through partnerships with jurisdictions, providers and researchers.



- 1.5 The data collection infrastructure should be developed to facilitate comparisons across jurisdictions and over time where possible.
- 1.6 The data collection infrastructure should be flexible and modifiable, given there may be an interest in collecting other types of PHC data in the future as PHC renewal efforts proceed. Revisit the scope of the data collection infrastructure periodically to ensure it matches ongoing information needs.

**PHC Client/Patient and Population-Based Survey Enhancement:**

- 2.1 Explore opportunities to modify and expand the questions in the pan-Canadian population-based CCHS to capture the PHC data required to fully or partially report the maximum number of client/patient PHC indicators. This may include adding and modifying questions in the core and special theme modules of the CCHS to facilitate reporting of the PHC indicators related to PHC access, client/patient experiences and satisfaction, chronic disease management and health risk behaviours.
- 2.2 Encourage the use of the indicators in other PHC measurement efforts, such as health region and PHC population or client/patient surveys.

**PHC Provider and Organization Survey Enhancement:**

- 3.1 Explore opportunities to modify and expand the NPS to capture the PHC data required to fully or partially report the maximum number of provider and organizational indicators. Ideally, some of these changes will be made in time to capture new PHC indicator data in the 2007 cycle of NPS.
- 3.2 Explore opportunities to capture PHC provider and organization data from other PHC providers from existing and new surveys. One option that could be explored is the expansion of NPS, beyond physicians, to serve as a pan-Canadian PHC provider and organization survey that builds on the existing NPS and continues to allow for a link between FPs/GPs and physician specialists through NPS. This would require an extensive amount of collaboration and might not be feasible given the existing and important role of the NPS. If NPS expansion is not feasible, other mechanisms could be explored, such as drawing on existing and new provider surveys to capture provider and organization data for the PHC indicators, perhaps with an initial focus on the relevant indicators on the abridged list of 30.
- 3.3 Explore opportunities to access or inform the development of PHC organization and provider registries so they can be used to identify samples for the surveys of PHC organizations and providers that will provide that data required to report the related indicators.



### **PHC Clinical and Other Administrative Data Source Enhancement:**

- 4.1** Explore opportunities to obtain agreement on common variables and/or content standards that should be included as part of the content of a PHC electronic medical record. This would support the collection of comparable PHC information from clinic-based electronic medical records that could be used to report some of the clinical administrative indicators and it could be used to inform the development of the content for the integrated electronic health record (EHR).
- 4.2** Explore opportunities to enhance data submissions from relevant regulatory bodies/associations and provinces/territories to existing (and developing) pan-Canadian health human resource and health spending databases to facilitate reporting of the related PHC indicators.

## **5.2 Conclusion**

This report identifies a range of options for enhancing the PHC data collection infrastructure. While it seems that no country has successfully implemented a truly comprehensive infrastructure at this point, within Canadian jurisdictions there are signs of significant progress. Existing initiatives can be looked to as models of success and best practice.

Canada shares the goals of many other countries when it comes to PHC renewal and the development of a comprehensive and integrated PHC data collection infrastructure. Canada is well positioned to pursue the vision of a future PHC data collection infrastructure as a result of the following advantages:

- Canada has a strong history of successful and highly collaborative pan-Canadian initiatives, which improves its prospects for achieving system-wide PHC data collection.
- Established organizations, such as Statistics Canada and CIHI have many years of experience in standardizing, collecting, analyzing, safeguarding, and utilizing health-related data from administrative and survey data sources from across Canada.
- Newly established agencies such as Canada Health Infoway whose mandate is to “accelerate the development and adoption of electronic health information systems in Canada” will help promote an increased level of standardization and systems interoperability.
- All jurisdictions have demonstrated a commitment to improving PHC and the need for better PHC information has been recognized. The agreed-upon PHC indicators and options for enhancing the PHC data collection infrastructure, provided through this project, can serve as starting point for obtaining better PHC information.



***You Can't Manage What You Can't Measure***

Given that an estimated \$5 billion annually is spent just on FP/GP fee-for-service related services in Canada<sup>2</sup> and data on PHC indicators identified as a priority by a group of stakeholders is limited, improving the PHC data collection infrastructure has the potential to equip decision-makers and policy makers with more of the information they need to improve the effectiveness of PHC and its impact on the health care system and the health of the population. Improvements in the availability of PHC information might also support efforts to communicate more effectively with the public regarding the performance of their health care system.

In recent years, considerable investments have been made with the goal of improving PHC in Canada, but the information available to measure and manage PHC renewal in Canada is limited. Many providers, communities, researchers and policy makers have committed time, energy and resources to improving primary health care across Canada. Through continued collaboration and commitment, some of the options provided in this report could be used to increase the availability of comparable and relevant PHC information across Canada.





# Appendix A



SAMPLE ABRIDGED LIST OF PHC INDICATORS		
ACCESS TO PHC THROUGH A REGULAR PROVIDER	COMPREHENSIVE CARE, PREVENTIVE HEALTH AND CHRONIC CONDITION MANAGEMENT	CONTINUITY THROUGH INTEGRATION AND COORDINATION
<ul style="list-style-type: none"> <li>Population with a regular PHC provider</li> <li>Difficulties accessing routine PHC*</li> </ul>	<ul style="list-style-type: none"> <li>Scope of PHC services</li> <li>Health risk screening in PHC*</li> <li>PHC client/patient registries for chronic conditions*</li> <li>PHC programs for chronic conditions*</li> <li>Client/patient participation in PHC treatment planning</li> </ul>	<ul style="list-style-type: none"> <li>Collaborative care with other health care organizations</li> </ul>
24/7 ACCESS TO PHC	PATIENT-CENTRED PHC	ENHANCING POPULATION ORIENTATION
<ul style="list-style-type: none"> <li>Difficulties obtaining urgent, non-emergent PHC on evenings and weekends</li> <li>PHC after hours coverage</li> <li>Difficulties accessing routine PHC*</li> </ul>	<ul style="list-style-type: none"> <li>Client/patient satisfaction with PHC providers</li> <li>Language barriers when communicating with PHC providers</li> </ul>	<ul style="list-style-type: none"> <li>PHC client/patient registries for chronic conditions*</li> <li>PHC programs for chronic conditions*</li> <li>Specialized PHC programs for vulnerable/special needs populations</li> </ul>
QUALITY IN PHC		
<p><b>Primary Prevention</b></p> <ul style="list-style-type: none"> <li>Influenza immunization, 65 +</li> <li>Cervical cancer screening</li> <li>Health risk screening in PHC*</li> </ul> <p><b>Secondary Prevention for Chronic Conditions</b></p> <ul style="list-style-type: none"> <li>Screening for modifiable risk factors in adults with coronary artery disease</li> <li>Screening for modifiable risk factors in adults with hypertension</li> <li>Screening for modifiable risk factors in adults with diabetes</li> </ul>		
<p><b>PHC INPUTS AND SUPPORTS</b></p> <p><b>Information Technology</b></p> <ul style="list-style-type: none"> <li>Uptake of information and communication technology in PHC organizations</li> </ul> <p><b>Allocations for PHC</b></p> <ul style="list-style-type: none"> <li>Average per capita PHC operational expenditures</li> </ul>		
<p><b>Health Human Resources</b></p> <ul style="list-style-type: none"> <li>PHC organizations accepting new clients/patients</li> </ul> <p><b>Interdisciplinary Teams</b></p> <ul style="list-style-type: none"> <li>PHC FPs/GPs/NPs working in interdisciplinary teams/networks</li> </ul> <p><b>Provider Payment Methods</b></p> <ul style="list-style-type: none"> <li>PHC provider remuneration method</li> </ul>		

\*Indicator repeated because it reflects multiple dimensions.







# Appendix B

## Key Sources of Health Data

The collection of health information for monitoring, evaluation and research typically requires varied approaches, methods and sources.<sup>26</sup> Not surprisingly, no single data collection method or source will address the broad range of PHC indicators. Two broad sources of health data are outlined below.

### *Administrative Data*

Advantages of administrative data include the data are readily available, relatively inexpensive to access compared to clinical data sources and capture information on a large number of individuals system-wide.<sup>26</sup> Administrative data can be categorized at various geographic levels to address specific questions. Reliability of administrative data for specific study questions has been confirmed through various studies. However, the fields currently collected and available limit the use of administrative data to assess performance of PHC.

Types of PHC-relevant information that may be contained in an administrative data set include:

- PHC “encounter” data (e.g. procedures/interventions, referral data, diagnosis);
- Laboratory and diagnostic imaging services data;
- Medication/prescription data;
- Hospital discharge data;
- Emergency visit data; and
- Other administrative data relating to the following:
  - Health human resources (e.g. number of full-time equivalent registered health professionals by age, gender, education, employment, geographical representation) and information regarding full-time equivalents and providers entering/leaving the workforce;
  - Financial and other resource information (e.g. per capita PHC expenditures) and health region data (e.g. health region level planning).

Administrative data in health care is routinely collected to document activities and transactions of providers (e.g. physicians) and organizations (e.g. hospitals).<sup>26, 27</sup> Sources of administrative data include but are not limited to hospital discharge summaries, physician billing claims, claims for prescription drugs, and other health related information sources.<sup>26, 27</sup> Administrative data has many advantages. Since



the databases are already in use, they can be cost-efficient.<sup>27</sup> Administrative data also allows for estimates of many conditions and factors at the local or regional levels.<sup>27</sup> In some cases, where unique identifiers are available, information can be linked across different administrative data sets. As well, administrative data may reduce reliance on self-reported information from individuals that may be affected by perception and recall.<sup>26</sup>

However, there are limitations to administrative health data. Many of the databases were originally constructed to serve administrative functions in the health care system (e.g. to allow service providers to submit reimbursement claims for services provided).<sup>26</sup> Therefore, while the databases are rich in information about select diagnostic, utilization, supply, and cost issues, their usefulness for addressing other factors (such as outcomes) can be limited in some databases.<sup>26</sup>

### ***Survey Data***

Types of PHC-relevant information that may be obtained from surveys include:

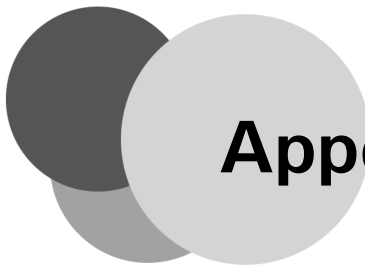
- client/patient or population perspective data;
- provider perspective data; and
- organization related data.

A survey is a tool for collecting information from individuals, providers and organizations and are most often used to capture data not collected in administrative databases.<sup>26</sup> The types of information usually gathered through surveys include person-level data on issues such as patient satisfaction, their care experiences, quality of life, health behaviours and problems related to accessing services.<sup>26</sup> Surveys can also be used to collect information on provider and organizational characteristics.<sup>26</sup> In some cases, surveys might be used to overcome limitations or fill gaps in administrative databases. In other instances they are the only appropriate and/or feasible method of gathering information (e.g. satisfaction surveys).

Survey data provide a range of information from self-assessed health status and self-reported prevalence rates for specific conditions, to access to services and satisfaction with care received.<sup>28</sup>

A significant number of surveys are conducted on health related issues across Canada and within provinces and territories. As well, other non-health specific surveys, such as labour surveys that can contain useful and relevant information. Some of these surveys can provide some of the data required to report some of the PHC indicators.





# Appendix C

## Existing Pan-Canadian and Provincial PHC Related Data Sources

At the pan-Canadian level, the organizations that collect and maintain population-based health and health services data are Statistics Canada and CIHI. In addition, Health Canada maintains a number of data sets associated with its public health and surveillance mandate. At the provincial/territorial level, the ministries collect a range of data for a variety of purposes. Finally, at the health region and organizational level, additional data sources are in place. Descriptions of the data sources that may be most relevant for the pan-Canadian reporting of the PHC indicators are provided below.

### *Pan-Canadian Data Sources*

We identified twelve existing pan-Canadian data sources that have potential relevance to the PHC indicators data source requirements. Summary information on these databases is presented in the following tables.

**TABLE 15: Existing Pan-Canadian Data Sources Relevant to PHC Indicators**

NAME OF ADMINISTRATIVE DATABASE	DESCRIPTION	SOURCE
Discharge Abstract Database (DAD)	DAD receives data on hospital discharges from all hospitals in every province and territory except Quebec. DAD includes demographic, administrative and clinical data as well as additional data elements such as case mix group data.	CIHI
Hospital Morbidity Database (HMDB)	HMDB contains a count of cases separated (discharge or death) from a hospital, by primary diagnoses, for all provinces and territories. HMDB includes demographic, administrative and clinical data but does not include additional data elements such as case mix group data.	CIHI
National Ambulatory Care Reporting System (NACRS)	NACRS contains data on emergency room visits and includes demographic, administrative and clinical data, but is not currently collected in all provinces/territories.	CIHI
Registered Nurses Database (RNDB)	RNDB contains demographic, education and employment information on registered nurses.	CIHI
Licensed Practical Nurses Database (LPNDB)	LPNDB contains demographic, education and employment information on licensed practical nurses.	CIHI
Registered Psychiatric Nurses Database (RPNDB)	RPNDB contains demographic, education and employment information on registered psychiatric nurses. Registered psychiatric nurses are educated and regulated as a separate nursing profession in the provinces of Manitoba, Saskatchewan, Alberta and British Columbia.	CIHI



**TABLE 15: Existing Pan-Canadian Data Sources Relevant to PHC Indicators (cont'd)**

NAME OF ADMINISTRATIVE DATABASE	DESCRIPTION	SOURCE
Health Personnel Database (HPDB)	This database contains aggregate counts by province/territory and year for selected health professions. This includes: the number of members of health professional associations by province/territory; counts of graduates of health professional educational/training programs; and, where possible, data on active-registered health personnel by licensing organizations.	National and provincial/territorial professional organizations, licensing authorities, governments, educational institutions, and Statistics Canada
National Physician Database (NPDB)	NPDB currently contains one phase of data on fee-for-service health care services delivered by licensed physicians in Canada. It is provided to CIHI from provincial/territorial physician billing systems. There is also on-going work with provinces/territories to collect data on physicians paid through alternative service plans.	CIHI
Scott's Medical Database	Scott's Medical Database provides demographic, education and practice information on the supply, distribution and migration patterns of Canadian physicians.	CIHI
National Physician Survey (NPS)	NPS is a comprehensive survey that collects information on what physicians in Canada are currently doing in their practices in response to societal health care needs across Canada, as well as personal interests and career plans for all licensed physicians in Canada.	College of Family Physicians of Canada, Canadian Medical Association and Royal College of Physicians and Surgeons of Canada
Canadian Community Health Survey (CCHS)	The CCHS provides cross-sectional estimates of health determinants, health status and health system utilization for all health regions across Canada.	Statistics Canada
The National Survey of the Work and Health of Nurses (NSWHN)	The NSWHN is a new sample survey (administered in Oct.–Dec. 2005) of registered nurses, licensed practical nurses and registered psychiatric nurses from across Canada. The purpose of the survey is to identify relationships between selected health outcomes, the work environment and work life experiences. Although originally planned as a one-time survey, consideration is being given to administering it on a regular basis every two or three years.	Statistics Canada, Health Canada, CIHI



The following data sources were also examined but are not applicable for calculating PHC indicators because data may not yet be available or province/territory level reporting may not be possible:

- Canadian Health Measures Survey;
- National Longitudinal Survey of Children and Youth;
- National Population Health Survey;
- Participation and Activity Limitation Survey; and
- Business Register.

The following new and developing pan-Canadian data sources may provide relevant data to the PHC data collection infrastructure in the future.

**TABLE 16: New and Developing Pan-Canadian Data Sources Relevant to PHC Indicators**

NAME OF DEVELOPING SOURCE	DESCRIPTION	SOURCE
National Prescription Drug Utilization Information System (NPDUIS)	The NPDUIS is a pan-Canadian information system that holds information on drug benefit formularies, drug claims, drug plans and population statistics. The NPDUIS has the potential to provide critical analyses of price, utilization and cost trends so that Canada's health system has more comprehensive and accurate information on how prescription drugs are being used and sources of cost increase.	CIHI
Health Human Resources Databases Development Project (HHR-DDP)	The Health Human Resources Databases Development Project will help to address information gaps by developing new national, supply-based databases and reporting systems for five regulated health professions: occupational therapy, pharmacy, physiotherapy, medical radiation technology and medical laboratory technology. These five new databases will support health human resource monitoring and evaluation, planning, research and policy activities by providing a new source of timely, quality information on these groups of health professionals.	CIHI
National Diabetes Surveillance System (NDSS)	The National Diabetes Surveillance System (NDSS) is a health information initiative launched as part of the National Diabetes Strategy to address critical information gaps about diabetes in Canada. The NDSS is a diabetes surveillance system (rather than a central repository) based on administrative databases and sends aggregate level data to Health Canada. NDSS can measure prevalence, incidence and outcomes for both the country as a whole and for specific regions.	Public Health Agency of Canada, Provinces/Territories



**TABLE 16: New and Developing Pan-Canadian Data Sources Relevant to PHC Indicators (cont'd)**

NAME OF DEVELOPING SOURCE	DESCRIPTION	SOURCE
Canadian Immunization Registry Network (CIRN)	The Canadian Registry Network is an initiative that included the development of comparable data standards and minimum data set for the collection of immunization-related data across Canada. The system aims to monitor vaccine coverage in Canada by providing timely aggregate data related to immunization coverage and vaccine use. Data to be collected through the surveillance system include: patient identifier, sex, date of birth, province/ territory/city, health unit organization name, vaccine administered, immunizing agent, date of vaccination, health related event, and vaccine preventable disease history. Currently provincial/territorial jurisdictions submit aggregate level data to Health Canada every two years (there currently is no central repository).	Public Health Agency of Canada

In addition to identifying these existing, new and developing pan-Canadian data sources that could potentially provide data for the development of pan-Canadian PHC indicators, we assessed over 50 provincial/territorial administrative and survey data sources for their potential usefulness. Highlights of this review are provided in the remainder of this section.

***Provincial Data Sources***

**Physician Fee-for-Service Claims Systems**

The CIHI team obtained detailed information about each province’s/territory’s physician fee-for-service claims systems. The following table summarizes information obtained from each jurisdiction on classification and coding standards that are currently in use.



TABLE 17 : Classification/Coding Standards Used for Fee-for-Service Physician Claim Submissions

JURISDICTION	CODING STANDARD FOR CLIENT/PATIENT DIAGNOSIS/PROBLEM	CODING STANDARD FOR PHYSICIAN INTERVENTIONS/ MANOEUVRES	CODING STANDARD FOR DIAGNOSTIC IMAGING EXAMINATIONS	CODING STANDARD FOR LABORATORY TESTS
British Columbia	ICD-9	Self-developed codes	Self-developed codes	Self-developed codes
Alberta	ICD-9	CCP	Self-developed codes	Self-developed codes
Saskatchewan	ICD-9	Self-developed codes	Self-developed codes	Self-developed codes
Manitoba	ICD-9-CM	Self-developed codes	Self-developed codes	Self-developed codes
Ontario	ICD-9	ICD-9	ICD-9	ICD-9
Quebec	ICD-9	Self-developed codes	Self-developed codes	Self-developed codes
Prince Edward Island	ICD-9	Self-developed codes	No codes required	No codes required
Newfoundland and Labrador	ICD-9	Self-developed codes	Self-developed codes	No codes required
Nova Scotia	ICD-9	CCP-modified	Self-developed codes	No data collection
New Brunswick	Does not use ICD	Self-developed codes	Self-developed codes	No data collection
Yukon	ICD-9 (50% of claims); + self developed codes (all claims)	Self-developed codes	Self-developed codes	Self-developed codes
Northwest Territories	ICD-9	Self-developed codes	Self-developed codes	Self-developed codes
Nunavut	ICD-9	ICD-9	One code only used	ICD-9

**Note:** The Northwest Territories, Manitoba and Alberta reported that they are investigating possible changes to coding standards, such as the implementation of ICD-10-CA for client/patient diagnoses/problems. All other jurisdictions reported that no plans are in place to change current coding conventions.

The following issues in physician fee-for-service claims data were identified:

1. Completeness of physician fee-for-service claims datasets:

- In some jurisdictions, “shadow billing” (submission of a claim showing a service was provided, although payment is not directly linked to service provision) is required for all physicians not remunerated by fee-for-service; however, it is not required in all jurisdictions.



- The completeness of shadow billing is not known in all jurisdictions.
  - Many providers working within new PHC models are receiving salary-based compensation and may or may not submit billing data.
2. Fee codes are not readily comparable across all jurisdictions.
  3. The coding systems are rudimentary—the type and granularity of data elements required for the PHC indicators are typically not recorded.
  4. Diagnostic information is condensed and/or missing. In some jurisdictions physicians do not use a standard classification system such as ICD-9 but instead use a condensed list from the province.
  5. In some jurisdictions the accuracy of the diagnostic information is questionable. In its report *Improving Health Care Data in Ontario*, the Institute for Clinical Evaluative Sciences stated that the quality of the diagnostic information was poor.<sup>29</sup> Most provincial scan interviewees reported similar findings.

### ***Drug Claims Databases***

Information about each provincial drug claims database was also collected.

The following issues were identified:

1. At the pan-Canadian level, drug claim databases would benefit from a unique patient identifier to facilitate linkages with other datasets.
2. Only British Columbia, Manitoba and Saskatchewan have population-based prescription drug data. Other jurisdictions have coverage that is restricted to, for example, elderly patients or patients on social assistance.
3. The accessibility and cost of accessing these databases is variable.





**Provincial Surveys**

Client/patient and provider surveys have been conducted in Alberta, New Brunswick, Ontario (just beginning), Newfoundland and Labrador, Prince Edward Island and Saskatchewan. An organizational survey is being used in Prince Edward Island. The psychometric qualities of these surveys have not been confirmed.

**TABLE 18: Existing PHC Related Provincial Surveys**

TYPE OF SURVEY	NAME OF SURVEY INSTRUMENT	DESCRIPTION
Patient level survey	Satisfaction with Health Care Services. A Survey of Albertans 2004	The Health Quality Council of Alberta (HCQA) survey measures satisfaction with health care services received in the following service areas: family doctors, community walk-in clinics, emergency room services, specialists, diagnostic testing, hospital services, surgery, home care, long term care, mental health and Health Link.
	Saskatchewan Client Satisfaction Survey	The purpose of this survey is to learn how clients feel about the health care services that they are receiving at a PHC site.
	Prince Edward Island Client Satisfaction Survey	This is a survey to look at satisfaction of PHC clients/patients.
	Community Health Centre Patient Survey (New Brunswick)	This survey captures wait times and satisfaction.
	Newfoundland and Labrador Client/Patient Satisfaction Tool (CPST)	This survey captures satisfaction of PHC clients/patients.
	Ontario Primary Care Access Survey	This survey (to be administered quarterly in 2006 and 2007) focuses on access to PHC services, service use, practice setting, awareness of Tele-health services, as well as perceived health and chronic conditions, household composition and socio-demographics. Respondents are also asked to provide their OHIP numbers.
Provider level survey	Team Effectiveness Tool (Saskatchewan)	This survey instrument addresses: <ul style="list-style-type: none"> <li>• team functioning;</li> <li>• internal team relationships and interactions; and</li> <li>• team and provider perception regarding improved partnerships between the team and other providers, other sectors, private sector, regional health programs and itinerant providers.</li> </ul>
	New Brunswick Community Health Centre Service Provider Survey	This survey assesses activities, professional development, interdisciplinary work, documentation, and quality of work-life.
	Scope of Practice Tool (Newfoundland and Labrador)	The purpose of this tool is to: <ul style="list-style-type: none"> <li>• clarify roles and functions for which professionals have the knowledge, skills and legislative authority; and</li> <li>• identify areas of overlap/opportunities/challenges at a provincial level in relation to roles and functions, with development of action plans to manage opportunities and challenges.</li> </ul>
Organization level	Prince Edward Island Organization Survey	This survey is sent to managers of each of the health centres to obtain information on their structure and activities.



### ***Electronic Health Records and Client Registries***

In March 2004, Health Canada published *Towards an Evaluation Framework for Electronic Health Records Initiatives*.<sup>30</sup> There were three major components to this report:

1. Inventory of electronic health record initiatives across Canada.
2. Annotated bibliography and systematic assessment of the published literature and project reports.
3. Proposed evaluation framework for assessing electronic health records initiatives across Canada.

Canada Health Infoway is currently facilitating integrated standards development to support implementation of a pan-Canadian electronic health record. Some provinces have also begun implementing a common unique personal identifier and client registry system to support integrated regional and provincial health information. Examples of these initiatives include:

**UNIQUE PERSONAL IDENTIFIER AND CLIENT REGISTRY  
NEWFOUNDLAND AND LABRADOR CENTRE  
FOR HEALTH INFORMATION**

In January 2005, the Newfoundland and Labrador Centre for Health Information (NLCHI) and Canada Health Infoway announced the successful implementation of the first provincial client registry in Canada. The Unique Personal Identifier and Client Registry (UPI/Client Registry) is an information system and database of PHC clients/patients, and resident demographic information. It has been used since 2002 by all hospitals, community services offices, long-term care facilities, and the Medical Care Plan (MCP) to accurately identify all individuals accessing the health system in Newfoundland and Labrador. This allows organizations access to up-to-date contact information without requiring that individuals report to them when they move.

"The state-of-the-art UPI/Client Registry provides a rock solid foundation for the provincial electronic health record that the Centre is developing in cooperation with pharmacists, physicians, radiologists, the health boards and the Department of Health and Community Services," said Steve O'Reilly, Chief Executive Officer, Newfoundland and Labrador Centre for Health Information. "Both the Newfoundland and Labrador Pharmacy Network, and the provincial DI/PACS Network (Diagnostic Imaging and Picture Archiving and Communications Systems) will use the UPI/Client Registry for identifying patients."<sup>31</sup>



Another provincial initiative underway in Alberta will facilitate consistency, standardization, access to and use of clinical administrative data and systems for PHC organizations.

**PHYSICIAN OFFICE SYSTEM  
PROGRAM (POSP) – ALBERTA<sup>32</sup>**

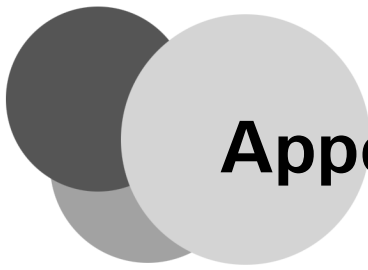
The Physician Office System Program (POSP) is an initiative developed under the master agreement between the Alberta Medical Association, Alberta Health and Wellness and Alberta's Regional Health Authorities (RHAs). The sponsors have provided \$65 million over three years of the program. This phase builds on the success of POSP phase one (October 2001 to March 2003), enrolling 1,500 physicians.

This provincial initiative highlights a number of features critical to a PHC data collection infrastructure. In meeting its objectives the POSP initiative will:

- Support the implementation of information technology in FPs/GPs offices resulting in a system with integrated provincial and regional information.
- Support the change management process required to transition to a fully automated office.
- Achieve consistency and standardization through compliance with Vendor Conformance and Usability Requirements (VCUR) (these requirements include specifications that support the standards ICPC and ICD-10-CA).
- Where possible, support the connection to Alberta WellNet EHR applications.







# Appendix D

## Gap Analysis of Data Availability of PHC Indicators

This appendix provides an overview of the availability of data source(s) for the PHC indicators. Table 19 provides a high level overview of the available data sources by NES Objective and/or Support and detailed information on data sources is presented in Table 20.

**TABLE 19: High-Level Overview of Available Data Sources for PHC Indicators**

NES OBJECTIVE/ SUPPORT	INDICATORS WITH AN EXISTING DATA SOURCE	INDICATORS WITH AN EXISTING DATA SOURCE— PARTIALLY CALCULATE ONLY	INDICATORS WITH AN EXISTING DATA SOURCE— MODIFICATIONS REQUIRED	INDICATORS WHERE AN EXPANDED DATA SOURCE IS REQUIRED	INDICATORS WHERE A NEW DATA SOURCE IS REQUIRED	TOTAL
<b>Objective 1.</b> To increase the proportion of the population that receives ongoing care from a primary health care provider who assumes principal responsibility for their care and who knows their personal and health characteristics.		1	3			4
<b>Objective 2.</b> To increase the number of primary health care organizations who are responsible for providing planned services to a defined population.				7		7
<b>Objective 3.</b> To enhance the provision of whole-person, comprehensive primary health services, including acute episodic and ongoing care with increased emphasis on health promotion, disease and injury prevention, and management of common mental health conditions and chronic diseases.	5	1		10	1	17



TABLE 19: High-Level Overview of Available Data Sources for PHC Indicators (cont'd)

NES OBJECTIVE/ SUPPORT	INDICATORS WITH AN EXISTING DATA SOURCE	INDICATORS WITH AN EXISTING DATA SOURCE— PARTIALLY CALCULATE ONLY	INDICATORS WITH AN EXISTING DATA SOURCE— MODIFICATIONS REQUIRED	INDICATORS WHERE AN EXPANDED DATA SOURCE IS REQUIRED	INDICATORS WHERE A NEW DATA SOURCE IS REQUIRED	TOTAL
<b>Objective 4.</b> To enhance 24/7 access for patient-initiated urgent care which is effectively linked with the patient's usual primary health care provider.			1	5		6
<b>Objective 5.</b> To deliver high quality and safe primary health services and to promote a culture of quality improvement in primary health care organizations.	1		4	16	17	38
<b>Objective 6.</b> To ensure that primary health care is acceptable to patients and that it meets their reasonable expectations of how they should be treated (responsiveness).	1	1		4*		6
<b>Objective 7.</b> To facilitate integration and coordination between health care institutions and health care providers to achieve informational and management continuity of patient care.				6		6
<b>Support 1.</b> Adequate supply of health human resources to meet primary health care needs.		4	2	2*	1	9
<b>Support 2.</b> Interdisciplinary primary health care teams.	2		2	2*		6



TABLE 19: High-Level Overview of Available Data Sources for PHC Indicators (cont'd)

NES OBJECTIVE/ SUPPORT	INDICATORS WITH AN EXISTING DATA SOURCE	INDICATORS WITH AN EXISTING DATA SOURCE— PARTIALLY CALCULATE ONLY	INDICATORS WITH AN EXISTING DATA SOURCE— MODIFICATIONS REQUIRED	INDICATORS WHERE AN EXPANDED DATA SOURCE IS REQUIRED	INDICATORS WHERE A NEW DATA SOURCE IS REQUIRED	TOTAL
<b>Support 3.</b> Information technology that is adapted to primary health care and links primary health care organizations with the rest of the health care system.				3		3
<b>Support 4.</b> Needs-based resource allocations for primary health care.					1	1
<b>Support 5.</b> Provider payment methods that align with primary health care goals.		2				2
<b>TOTAL</b>	<b>9</b>	<b>9</b>	<b>12</b>	<b>55</b>	<b>20</b>	<b>105</b>

\* In some cases, even where existing data sources can be modified, indicators may only be partially reported.



**TABLE 20: Gap Analysis of Data Availability of PHC Indicators**

“Likely Data Source” indicates the type of data source required to calculate the indicator—either clinical administrative, other administrative or survey based.

“Availability of Data Source” indicates whether the indicator can be calculated using an existing pan-Canadian data source. *Yes, partial* refers to indicators that can be calculated but only for some dimensions of the indicator (e.g. indicator can be calculated for physicians but not all PHC provider types). *Yes, modified* refers to indicators that can be calculated but only if existing data can be modified (e.g. change existing survey questions). *No* refers to indicators that either require a new data source, or require expansion (e.g. addition of new survey questions) of an existing data source to support pan-Canadian reporting.

**OBJECTIVE 1: To increase the proportion of the population that receives ongoing care from a primary health care provider who assumes principal responsibility for their care and who knows their personal health characteristics**

INDICATOR NUMBER	INDICATOR DEFINITION	LIKELY DATA SOURCE	CURRENT AVAILABILITY OF DATA SOURCE	EXISTING OR POTENTIAL DATA SOURCE	COMMENTS
1	% of population who currently have a regular PHC provider, by type of PHC provider.	Client/Patient Survey	Yes, partial	CCHS	Only available for FPs/GPs.
2	% of population, 18 years and over, who experienced difficulties obtaining required routine or ongoing PHC services, from their regular PHC provider, over the past 12 months.	Client/Patient Survey	Yes, if modified	CCHS*	Does not specify type of PHC provider or setting where care was received. Found in the Access to Health Care Services section of CCHS.
3	% of population, 18 years and over, who experienced difficulties obtaining required health information or advice, from their regular PHC provider, over the past 12 months.	Client/Patient Survey	Yes, if modified	CCHS*	Does not specify type of PHC provider. Found in the Access to Health Care Services section of CCHS.
4	% of population, 18 years and over, who experienced difficulties obtaining immediate care for an emergent but minor health problem, from their regular PHC provider, over the past 12 months.	Client/Patient Survey	Yes, if modified	CCHS*	Does not specify type of PHC provider or setting where care was received. Found in the Access to Health Care Services section of CCHS.

\* Please note the Access to Health Services section of the CCHS is currently under review by Statistics Canada. It is likely that this section will be represented as “Theme” content in future versions of the survey and will not be reported on a biannual basis.





**OBJECTIVE 2: To increase the number of primary health care organizations who are responsible for providing planned services to a defined population**

INDICATOR NUMBER	INDICATOR DEFINITION	LIKELY DATA SOURCE	CURRENT AVAILABILITY OF DATA SOURCE	EXISTING OR POTENTIAL DATA SOURCE	COMMENTS
5	% of PHC organizations who used information on the composition of their practice population to allocate resources for programs/ services, over the past 12 months.	Organization Survey	No		NPS could be potentially expanded and modified to partially report on PHC FP/GP solo and group practice organizations.
6	% of PHC organizations who currently have a PHC client/ patient registry for chronic conditions.	Organization Survey	No		NPS could be potentially expanded and modified to partially report on PHC FP/GP solo and group practice organizations.
7	% of PHC organizations who currently have specific programs for PHC clients/patients with specific chronic conditions.	Organization Survey	No		NPS could be potentially expanded and modified to partially report on PHC FP/GP solo and group practice organizations.
8	% of PHC organizations who currently have processes to involve community input for planning the organization's services (e.g. advisory committees, focus groups).	Organization Survey	No		NPS could be potentially expanded and modified to partially report on PHC FP/GP solo and group practice organizations.
9	% of PHC organizations who currently do outreach to deliver PHC services to vulnerable/ special needs population groups.	Organization Survey	No		NPS could be potentially expanded and modified to partially report on PHC FP/GP solo and group practice organizations.
10	% of PHC organizations who currently provide specialized programs for vulnerable/special needs population groups.	Organization Survey	No		NPS could be potentially expanded and modified to partially report on PHC FP/GP solo and group practice organizations.
11	% of PHC organizations who currently receive information or process support from their health region to serve vulnerable/special needs population groups.	Organization Survey	No		NPS could be potentially expanded and modified to partially report on PHC FP/GP solo and group practice organizations.



**OBJECTIVE 3: To enhance the provision of whole-person, comprehensive primary health services, including acute episodic and ongoing care with increased emphasis on health promotion, disease and injury prevention and management of common mental health conditions and chronic diseases**

INDICATOR NUMBER	INDICATOR DEFINITION	LIKELY DATA SOURCE	CURRENT AVAILABILITY OF DATA SOURCE	EXISTING OR POTENTIAL DATA SOURCE	COMMENTS
12	<p>% of PHC organizations who currently provide the following services:</p> <ul style="list-style-type: none"> <li>• Management of care for an emergent but minor health problem (e.g. sprained ankle, unexplained rash);</li> <li>• Non-urgent routine care (e.g. well care [baby, child, woman and/or man] and chronic disease management);</li> <li>• Prevention and health promotion and/or education services;</li> <li>• Full maternity and child care;</li> <li>• Primary mental health care;</li> <li>• Psychosocial services (e.g. counselling advice for physical/emotional/financial problems);</li> <li>• Liaison with home care;</li> <li>• Referral to and follow-up care from specialized agencies such as hospitals, youth centers; specialists and/or other providers (through formalized arrangements and/or agreements);</li> <li>• Rehabilitation services;</li> <li>• Nutrition counselling services;</li> <li>• Provision of home visits by PHC physicians/nurses/nurse practitioners/pharmacists; and</li> <li>• End-of-life care.</li> </ul>	Organization Survey	No		NPS could be potentially expanded and modified to partially report on PHC FP/GP solo and group practice organizations.



**OBJECTIVE 3: To enhance the provision of whole-person, comprehensive primary health services, including acute episodic and ongoing care with increased emphasis on health promotion, disease and injury prevention and management of common mental health conditions and chronic diseases (cont'd)**

INDICATOR NUMBER	INDICATOR DEFINITION	LIKELY DATA SOURCE	CURRENT AVAILABILITY OF DATA SOURCE	EXISTING OR POTENTIAL DATA SOURCE	COMMENTS
13	% of PHC clients/patients, 12 years and over, who were screened by their PHC provider for the following common health risks over the past 12 months: <ul style="list-style-type: none"> <li>• Tobacco use;</li> <li>• Unhealthy eating habits;</li> <li>• Problem drug use;</li> <li>• Physical inactivity;</li> <li>• Overweight status;</li> <li>• Problem alcohol drinking;</li> <li>• Unintentional injuries (home risk factors);</li> <li>• Unsafe sexual practices; and</li> <li>• Unmanaged psychosocial stress and/or depression.</li> </ul>	Client/Patient Survey	No		CCHS could potentially be expanded with a chronic disease management theme module.
14	% of PHC clients/patients who are smokers, 12 years and over, who received specific help or information to quit smoking from their PHC provider, over the past 24 months.	Client/Patient Survey	Yes, partial	CCHS	Only available for FPs/GPs.
15	% of PHC clients/patients with problem alcohol drinking, 12 years and over, who received specific help or information to manage alcohol consumption, over the past 24 months.	Client/Patient Survey	No		CCHS could potentially be expanded with a chronic disease management theme module.



**OBJECTIVE 3: To enhance the provision of whole-person, comprehensive primary health services, including acute episodic and ongoing care with increased emphasis on health promotion, disease and injury prevention and management of common mental health conditions and chronic diseases (cont'd)**

INDICATOR NUMBER	INDICATOR DEFINITION	LIKELY DATA SOURCE	CURRENT AVAILABILITY OF DATA SOURCE	EXISTING OR POTENTIAL DATA SOURCE	COMMENTS
16	% of PHC clients/patients with unhealthy eating habits, 12 years and over, who received specific help or information on healthy dietary practices from their PHC provider, over the past 12 months.	Client/Patient Survey	No		CCHS could potentially be expanded with a chronic disease management theme module.
17	% PHC inactive clients/patients, 12 years and over, who received specific help or information on regular physical activity from their PHC provider, over the past 12 months.	Client/Patient Survey	No		CCHS could potentially be expanded with a chronic disease management theme module.
18	% of PHC organizations who currently have specific programs and/or initiatives (including self help and self management groups) to reduce the following health risks in their practice population: <ul style="list-style-type: none"> <li>• Tobacco use;</li> <li>• Unhealthy eating habits;</li> <li>• Problem alcohol drinking;</li> <li>• Obesity; and</li> <li>• Physical inactivity.</li> </ul>	Organization Survey	No		NPS could be potentially expanded and modified to partially report on PHC FP/GP solo and group practice organizations.
19	% of health regions who currently have specific programs and/or initiatives (including self help and self management groups) to reduce the following health risks in the population: <ul style="list-style-type: none"> <li>• Tobacco use;</li> <li>• Unhealthy eating habits;</li> <li>• Problem alcohol drinking;</li> <li>• Obesity; and</li> <li>• Physical inactivity.</li> </ul>	Organization Survey	No		Health region survey required.
20	% of population, 12 years and over, who are current smokers.	Client/Patient Survey	Yes	CCHS	
21	% of population, 12 years and over, who currently consume five or more servings of fruits and vegetables daily.	Client/Patient Survey	Yes	CCHS	
22	% of population who are currently overweight or obese.	Client/Patient Survey	Yes	CCHS	



**OBJECTIVE 3: To enhance the provision of whole-person, comprehensive primary health services, including acute episodic and ongoing care with increased emphasis on health promotion, disease and injury prevention and management of common mental health conditions and chronic diseases (cont'd)**

INDICATOR NUMBER	INDICATOR DEFINITION	LIKELY DATA SOURCE	CURRENT AVAILABILITY OF DATA SOURCE	EXISTING OR POTENTIAL DATA SOURCE	COMMENTS
23	% of population who currently engage in regular physical activity.	Client/Patient Survey	Yes	CCHS	
24	% of population, 12 years and over, who report heavy alcohol drinking behaviour in the past 12 months.	Client/Patient Survey	Yes	CCHS	
25	% of PHC clients/patients, 18 years and over, with a chronic health condition(s), whose PHC organization provided them with resources to support self-management or self-help groups.	Client/Patient Survey	No		CCHS could potentially be expanded with a chronic disease management theme module.
26	% of informal caregivers who received support for their care giving role from their PHC organization over the past 12 months.	Client/Patient Survey	No		CCHS could potentially be expanded with a chronic disease management theme module.
27	% of PHC clients/patients, 18 years and over, with a chronic condition(s), who had sufficient time in most visits to confide their health-related feelings, fears and concerns to their PHC provider.	Client/Patient Survey	No		CCHS could potentially be expanded with a chronic disease management theme module.
28	% of PHC clients/patients, 18 years and over, with a chronic condition(s), who actively participated in the development of a treatment plan with their PHC provider over the past 12 months.	Client/Patient Survey	No		CCHS could potentially be expanded with a chronic disease management theme module.



**OBJECTIVE 4: To enhance 24/7 access for patient-initiated urgent care which is effectively linked with the patient's usual primary health care provider**

INDICATOR NUMBER	INDICATOR DEFINITION	LIKELY DATA SOURCE	CURRENT AVAILABILITY OF DATA SOURCE	EXISTING OR POTENTIAL DATA SOURCE	COMMENTS
29	% of population, 18 years and over, who experienced difficulties obtaining immediate care for an emergent but minor health problem, from their regular PHC provider, during evenings and weekends (5:00 pm to 9:00 pm, Monday to Friday or 9:00 am to 9:00 pm, Saturdays and Sundays), over the past 12 months.	Client/Patient Survey	Yes, if modified	CCHS*	Does not specify type of PHC provider or setting where care was received. Found in the Access to Health Care Services section of CCHS.
30	% of PHC organizations who currently provide after hours coverage (beyond 9:00 am to 5:00 pm Monday to Friday) for their practice population.	Organization Survey	No		NPS could be potentially expanded and modified to partially report on PHC FP/GP solo and group practice organizations.
31	Average number of extended hours (beyond 9:00 am to 5:00 pm, Monday to Friday), provided by PHC organizations per month, by PHC organization.	Organization Survey	No		NPS could be potentially expanded and modified to partially report on PHC FP/GP solo and group practice organizations.
32	Average length of time in days between client/patient appointment request with their regular PHC provider and the appointment for an emergent but minor health problem.	Clinical Administrative	No		PHC encounter data required.
33	% of PHC clients/patients, 18 years and over, who are satisfied with wait time to obtain an appointment with their regular PHC provider for an emergent but minor health problem.	Client/Patient Survey	No		
34	% of PHC clients/patients, 18 years and over, who are satisfied with wait time to obtain an appointment with their regular PHC provider for non-urgent routine care.	Client/Patient Survey	No		

\* Please note Access to Health Care Services section of the CCHS is currently under review by Statistics Canada. It is likely that this section will be represented as "Theme" content in future versions of the survey and will not be reported on a biannual basis.



**OBJECTIVE 5: To deliver high quality and safe primary health services and to promote  
a culture of quality improvement in primary health care organizations**

INDICATOR NUMBER	INDICATOR DEFINITION	LIKELY DATA SOURCE	CURRENT AVAILABILITY OF DATA SOURCE	EXISTING OR POTENTIAL DATA SOURCE	COMMENTS
35	Age-standardized acute care hospitalization rate for conditions where appropriate ambulatory care prevents or reduces the need for admission to hospital, per 100,000 population, 75 years and under.	Clinical Administrative	Yes	HMDB	Acute care hospital data required.
36	% of PHC clients/patients, ages 18 to 64 years, with established diabetes mellitus (Type 1 and Type 2) who have had an acute myocardial infarction or above or below knee amputation or began chronic dialysis within the past 12 months.	Clinical Administrative	Yes, if modified	DAD or HMDB	Acute care hospital data and PHC encounter data required.
37	% of PHC clients/patients, ages 6 to 55 years, with asthma who visited the emergency department in the past 12 months.	Clinical Administrative	Yes, if modified	NACRS	Emergency room hospital data and PHC encounter data required.
38	% of PHC clients/patients, ages 20 to 75 years, with congestive heart failure who visited the emergency department for congestive heart failure in the past 12 months.	Clinical Administrative	Yes, if modified	NACRS	Emergency room hospital data and PHC encounter data required.
39	% of PHC clients/patients, 18 years and over, with diabetes mellitus in whom the last HbA1c was 7.0% or less (or equivalent test/reference range depending on local laboratory) in the last 15 months.	Clinical Administrative	No		Laboratory data and PHC encounter data required.
40	% of PHC clients/patients, 18 years and over, with hypertension for duration of at least one year, who have blood pressure measurement control (i.e. less than 140/90 mmHg).	Clinical Administrative	No		PHC encounter data required.



**OBJECTIVE 5: To deliver high quality and safe primary health services and to promote a culture of quality improvement in primary health care organizations (cont'd)**

INDICATOR NUMBER	INDICATOR DEFINITION	LIKELY DATA SOURCE	CURRENT AVAILABILITY OF DATA SOURCE	EXISTING OR POTENTIAL DATA SOURCE	COMMENTS
41	% of PHC clients/patients, 65 years and over, who received an influenza immunization within the past 12 months.	Clinical Administrative Available in Client/Patient Survey	No		Immunization data and PHC encounter data required.  CCHS has related questions but an administrative data source is preferred.
42	% of PHC clients/patients, 65 years and over, who have received a pneumococcal immunization.	Clinical Administrative	No		Immunization data and PHC encounter data required.
43	% of PHC clients/patients who received screenings for congenital hip displacement, eye and hearing problems by 3 years of age.	Clinical Administrative	No		PHC encounter data required.
44	% of PHC clients/patients who received required primary childhood immunizations by 7 years of age.	Clinical Administrative	No		Immunization data and PHC encounter data required.
45	% of women PHC clients/patients, who had a live birth and received counselling on breast feeding, education programs and postpartum support to promote breast feeding.	Clinical Administrative	No		PHC encounter data required.
46	% of women PHC clients/patients who are pregnant or post partum who have been screened for depression.	Clinical Administrative	No		PHC encounter data required.
47	% of PHC clients/patients with children under 2 years who were given information on child injury prevention in the home.	Clinical Administrative	No		PHC encounter data required.
48	% of PHC clients/patients, 50 years and over, who received screening for colon cancer with Hemocult test within the past 24 months.	Clinical Administrative	No		PHC encounter and lab data required.





**OBJECTIVE 5: To deliver high quality and safe primary health services and to promote a culture of quality improvement in primary health care organizations (cont'd)**

INDICATOR NUMBER	INDICATOR DEFINITION	LIKELY DATA SOURCE	CURRENT AVAILABILITY OF DATA SOURCE	EXISTING OR POTENTIAL DATA SOURCE	COMMENTS
49	% of women PHC clients/patients, ages 50 to 69 years, who received mammography and clinical breast exam within the past 24 months.	Clinical Administrative	No		PHC encounter and diagnostic imaging data required. CCHS has related questions but an administrative data source is preferred.
50	% of women PHC clients/patients, ages 18 to 69 years, who received papanicolaou smear within the past 3 years.	Clinical Administrative	No		Laboratory data and PHC encounter data required. CCHS has related questions but an administrative data source is preferred.
51	% of women PHC clients/patients, 65 years and older, who received screening for low bone mineral density at least once.	Clinical Administrative	No		Diagnostic imaging data and PHC encounter data required.
52	% of women PHC clients/patients, 55 years and over, who had a full fasting lipid profile measured within the past 24 months.	Clinical Administrative	No		Laboratory data and PHC encounter data required.
53	% of men PHC clients/patients, 40 years and over, who had a full fasting lipid profile measured within the past 24 months.	Clinical Administrative	No		Laboratory data and PHC encounter data required.
54	% of PHC clients/patients, 18 years and over, who had their blood pressure measured within the past 24 months.	Clinical Administrative	No		PHC encounter data required.
55	% of PHC clients/patients, 18 years and over, with coronary artery disease who received annual testing, within the past 12 months, for all of the following: <ul style="list-style-type: none"> <li>• Fasting blood sugar;</li> <li>• Full fasting lipid profile screening;</li> <li>• Blood pressure measurement; and</li> <li>• Obesity/overweight screening.</li> </ul>	Clinical Administrative	No		Laboratory data and PHC encounter data required.



**OBJECTIVE 5: To deliver high quality and safe primary health services and to promote a culture of quality improvement in primary health care organizations (cont'd)**

INDICATOR NUMBER	INDICATOR DEFINITION	LIKELY DATA SOURCE	CURRENT AVAILABILITY OF DATA SOURCE	EXISTING OR POTENTIAL DATA SOURCE	COMMENTS
56	<p>% of PHC clients/patients, 18 years and over, with hypertension who received annual testing, within the past 12 months, for all of the following:</p> <ul style="list-style-type: none"> <li>• Fasting blood sugar;</li> <li>• Full fasting lipid profile screening;</li> <li>• Test to detect renal dysfunction (e.g. serum creatinine);</li> <li>• Blood pressure measurement; and</li> <li>• Obesity/overweight screening.</li> </ul>	Clinical Administrative	No		Laboratory data and PHC encounter data required.
57	<p>% of PHC clients/patients, 18 years and over, with diabetes mellitus who received annual testing, within the past 12 months, for all of the following:</p> <ul style="list-style-type: none"> <li>• Hemoglobin A1c testing (HbA1c);</li> <li>• Full fasting lipid profile screening;</li> <li>• Nephropathy screening (e.g. albumin/creatinine ratio, microalbuminuria)</li> <li>• Blood pressure (BP) measurement; and</li> <li>• Obesity/overweight screening.</li> </ul>	Clinical Administrative	No		Laboratory data and PHC encounter data required. Data may be available through the diabetes preventive care section of the CCHS (optional content), but an administrative data source is preferred.
58	<p>% of PHC clients/patients, 18 to 75 years, with diabetes mellitus who saw an optometrist or ophthalmologist within the past 24 months.</p>	Clinical Administrative	No		Referral data and PHC encounter data required. Data may be available through diabetes preventive care section of the CCHS (optional content), but an administrative data source is preferred.



**OBJECTIVE 5: To deliver high quality and safe primary health services and to promote a culture of quality improvement in primary health care organizations (cont'd)**

INDICATOR NUMBER	INDICATOR DEFINITION	LIKELY DATA SOURCE	CURRENT AVAILABILITY OF DATA SOURCE	EXISTING OR POTENTIAL DATA SOURCE	COMMENTS
59	% of PHC clients/patients, ages 6 to 55 years, with asthma, who were dispensed high amounts (greater than 4 canisters) of short-acting beta2-agonist (SABA) within the past 12 months AND who received a prescription for preventer/controller medication (e.g. inhaled corticosteroid—ICS).	Clinical Administrative	No		Prescription drug data and PHC encounter data required.
60	% of PHC clients/patients, 18 years and over, with CHF who are using ACE inhibitors or ARBs.	Clinical Administrative	No		Prescription drug data and PHC encounter data required.
61	% of PHC clients/patients, 18 years and over, with established CAD and elevated LDL-C (i.e. greater than 2.5 mmol/L) who were offered lifestyle advice and/or lipid lowering medication.	Clinical Administrative	No		Laboratory data, prescription drug data and PHC encounter data required.
62	% of PHC clients/patients who have had an AMI and are currently prescribed a beta blocking drug.	Clinical Administrative	No		Prescription drug data and PHC encounter data required.
63	% of PHC clients/patients with depression who are taking antidepressant drug treatment under the supervision of a PHC provider, and who had follow-up contact by a PHC provider for review within two weeks of initiating antidepressant drug treatment.	Clinical Administrative	No		Prescription drug data and PHC encounter data required.
64	% of PHC clients/patients, 18 years and over, with depression who were offered treatment (pharmacological and/or non-pharmacological) or referral to a mental health provider.	Clinical Administrative	No		Prescription drug data and PHC encounter data required.



**OBJECTIVE 5: To deliver high quality and safe primary health services and to promote a culture of quality improvement in primary health care organizations (cont'd)**

INDICATOR NUMBER	INDICATOR DEFINITION	LIKELY DATA SOURCE	CURRENT AVAILABILITY OF DATA SOURCE	EXISTING OR POTENTIAL DATA SOURCE	COMMENTS
65	% of PHC clients/patients, 18 years and over, with panic disorder or generalized anxiety disorder who are offered treatment (pharmacological and/or non-pharmacological) or referral to a mental health provider.	Clinical Administrative	No		Prescription drug data and PHC encounter data required.
66	% of PHC clients/patients, with prescription or illicit drug use problems who were offered, provided or directed to treatment by the PHC provider.	Clinical Administrative	No		PHC encounter data required.
67	% of PHC providers whose PHC organization has processes and structures in place to support a non-punitive approach to medication incident reduction.	Provider Survey	No		
68	% of PHC organizations who currently use an electronic prescribing/drug ordering system that includes client/patient specific medication alerts.	Organization Survey	No		NPS could be potentially expanded and modified to partially report on PHC FP/GP solo and group practice organizations.
69	% of PHC organizations who implemented at least one or more changes in clinical practice as a result of quality improvement initiatives over the past 12 months.	Organization Survey	No		NPS could be potentially expanded and modified to partially report on PHC FP/GP solo and group practice organizations.
70	% of PHC organizations with a process in place to ensure that a current medication and problem list is recorded in the PHC client/patient's health record.	Organization Survey	No		NPS could be potentially expanded and modified to partially report on PHC FP/GP solo and group practice organizations.
71	% of PHC clients/patients who report that their regular PHC provider (e.g. FP/GP, NP) has not explained the side effects of medications when prescribed, within the past 12 months.	Client/Patient Survey	No		



**OBJECTIVE 5: To deliver high quality and safe primary health services and to promote a culture of quality improvement in primary health care organizations (cont'd)**

INDICATOR NUMBER	INDICATOR DEFINITION	LIKELY DATA SOURCE	CURRENT AVAILABILITY OF DATA SOURCE	EXISTING OR POTENTIAL DATA SOURCE	COMMENTS
72	% of PHC providers and support staff whose PHC organization provided them with support to participate in continuing professional development within the past 12 months, by type of PHC provider and support staff.	Provider Survey	Yes, partial, if modified	NPS NSWHN	Only available for FP/GP and/or nurses with changes to existing survey.

**OBJECTIVE 6: To ensure that primary health care is acceptable to patients and that it meets their reasonable expectations of how they should be treated (responsiveness)**

INDICATOR NUMBER	INDICATOR DEFINITION	LIKELY DATA SOURCE	CURRENT AVAILABILITY OF DATA SOURCE	EXISTING OR POTENTIAL DATA SOURCE	COMMENTS
73	% of PHC clients/patients, 18 years and over, who were satisfied with the care received from their regular PHC provider, over the past 12 months.	Client/Patient Survey	Yes, partial	CCHS*	Only available for FPs/GPs. Found in the Patient Satisfaction section of CCHS.
74	% of the population, 18 years and over, who were satisfied with the telephone health information or advice line, over the past 12 months.	Client/Patient Survey	Yes	CCHS*	Found in the Patient Satisfaction section of CCHS.
75	% of PHC clients/patients, 18 years and over, who would recommend their regular PHC provider to their family or friends.	Client/Patient Survey	No		
76	% of PHC clients/patients, 18 years and over, who were involved in clinical decision-making regarding their health, with their regular PHC provider, over the past 12 months.	Client/Patient Survey	No		

\* Please note the patient satisfaction (PAS) section of the CCHS is currently under review by Statistics Canada. It is likely that this section will be represented as "Theme" content in future versions of the survey and will not be reported on a biannual basis.



**OBJECTIVE 6: To ensure that primary health care is acceptable to patients and that it meets their reasonable expectations of how they should be treated (responsiveness) (cont'd)**

INDICATOR NUMBER	INDICATOR DEFINITION	LIKELY DATA SOURCE	CURRENT AVAILABILITY OF DATA SOURCE	EXISTING OR POTENTIAL DATA SOURCE	COMMENTS
77	% of clients/patients who were satisfied with the level of privacy provided by their PHC organization (e.g. staff in reception, clinicians in exam room), over the past 12 months.	Client/Patient Survey	No		
78	% of PHC clients/patients, 18 years and over, who experienced language barriers when communicating with their regular PHC provider, over the past 12 months.	Client/Patient Survey	No		

**OBJECTIVE 7: To facilitate integration and coordination between health care institutions and health care providers to achieve informational and management continuity of patient care**

INDICATOR NUMBER	INDICATOR DEFINITION	LIKELY DATA SOURCE	CURRENT AVAILABILITY OF DATA SOURCE	EXISTING OR POTENTIAL DATA SOURCE	COMMENTS
79	% of PHC organizations who currently coordinate client/patient care with other health care organizations using standardized clinical protocols or assessment tools.	Organization Survey	No		NPS could be potentially expanded and modified to partially report on PHC FP/GP solo and group practice organizations.
80	% of PHC organizations who currently have collaborative care arrangements with other health care organizations.	Organization Survey	No		NPS could be potentially expanded and modified to partially report on PHC FP/GP solo and group practice organizations.
81	% of PHC organizations who currently have collaborative care arrangements with providers/ organizations beyond the health care sector (e.g. housing, justice, police, education).	Organization Survey	No		NPS could be potentially expanded and modified to partially report on PHC FP/GP solo and group practice organizations.



**OBJECTIVE 7: To facilitate integration and coordination between health care institutions and health care providers to achieve informational and management continuity of patient care (cont'd)**

INDICATOR NUMBER	INDICATOR DEFINITION	LIKELY DATA SOURCE	CURRENT AVAILABILITY OF DATA SOURCE	EXISTING OR POTENTIAL DATA SOURCE	COMMENTS
82	% of PHC clients/patients, 18 years and over, who felt that unnecessary medical tests were ordered because the test had already been done, over the past 12 months.	Client/Patient Survey	No		
83	% of PHC FPs/GPs/NPs who repeated tests because findings were unavailable over the past month.	Provider Survey	No		NPS could be potentially expanded to report on PHC FPs/GPs.
84	% of PHC providers who had complete information (essential demographic and clinical information) at the point of care, most of the time, over the past 12 months.	Provider Survey	No		NPS could be potentially expanded to report on PHC FPs/GPs.

**SUPPORT 1: Adequate supply of health human resources to meet primary health care needs**

INDICATOR NUMBER	INDICATOR DEFINITION	LIKELY DATA SOURCE	CURRENT AVAILABILITY OF DATA SOURCE	EXISTING OR POTENTIAL DATA SOURCE	COMMENTS
85	PHC provider full time equivalents (FTEs) per 100,000 population, by type of PHC provider.	Other Administrative	Yes, partial	Scott's Medical Database NPDB	Only available for FPs/GPs.
86	Ratio of PHC providers entering/leaving the workforce over the past 12 months, by type of PHC provider.	Other Administrative	Yes, partial	Scott's Medical Database, NPDB	Only available for FPs/GPs.
87	% of PHC organizations who are currently accepting new PHC clients/patients.	Organization Survey	No		NPS could be potentially expanded and modified to report on PHC FP/GP solo and group practices.
88	% of PHC providers who are satisfied that they utilize the full extent of their skills, by type of PHC provider.	Provider Survey	Yes, partial, if modified	NPS NSWHN	Only available for FPs/GPs and/or nurses with changes to survey.



**SUPPORT 1: Adequate supply of health human resources to meet primary health care needs (cont'd)**

INDICATOR NUMBER	INDICATOR DEFINITION	LIKELY DATA SOURCE	CURRENT AVAILABILITY OF DATA SOURCE	EXISTING OR POTENTIAL DATA SOURCE	COMMENTS
89	% of PHC providers who report that there are currently adequate provisions to ensure their safety in their workplace, by type of PHC provider.	Provider Survey	No		NPS could be potentially expanded to report on PHC FPs/GPs. Could potentially be available for nurses in NSWHN.
90	% of PHC providers who had a workplace related injury over the past 12 months, by type of PHC provider.	Provider Survey	Yes, partial	NSWHN NPS	Only available for nurses. Require changes to survey for FPs/GPs.
91	% of PHC providers who missed work due to burnout (2 weeks or more) over the past 12 months, by type of PHC provider.	Provider Survey	Yes, partial, if modified	NPS NSWHN	Only available for FPs/GPs and for nurses with changes to survey required.
92	% of PHC providers who were satisfied with the overall quality of work life balance over the past 12 months, by type of PHC provider.	Provider Survey	Yes, partial	NPS NSWHN	Only available for FPs/GPs. Require changes to survey for nurses.
93	% of health regions that are currently implementing a plan to meet their PHC health human resource needs.	Organization Survey	No		Health regions survey required.





**SUPPORT 2: Interdisciplinary primary health care teams**

INDICATOR NUMBER	INDICATOR DEFINITION	LIKELY DATA SOURCE	CURRENT AVAILABILITY OF DATA SOURCE	EXISTING OR POTENTIAL DATA SOURCE	COMMENTS
94	% of population who received PHC services from an interdisciplinary PHC organization, over the past 12 months.	Client/ Patient Survey	Yes, if modified	CCHS	Only available for FPs/GPs. Found in the Access to Health Care Services CCHS section.
95	% of FPs/GPs who currently work in a solo PHC practice as their main PHC practice setting.	Provider Survey	Yes	NPS	
96	% of FPs/GPs who currently work in a group physician PHC practice as their main PHC practice setting.	Provider Survey	Yes	NPS	
97	% of PHC FPs/GPs/NPs who are currently working in an interdisciplinary PHC team or network as their main practice setting, by type of PHC provider.	Provider Survey	Yes, partial, if modified	NPS NSWHN	Only available for FPs/GPs and nurses with changes to surveys.
98	% of PHC clients/patients who report that the current range of services offered by their PHC organization meets their needs.	Client/ Patient Survey	No		
99	Average team effectiveness score based on: <ul style="list-style-type: none"> <li>• Strong leadership;</li> <li>• Clear objectives shared by all team members;</li> <li>• Mechanisms for working in and with the community;</li> <li>• Focus on quality care;</li> <li>• Client/patient focused goals;</li> <li>• Efficient and effective communication;</li> <li>• Appropriate variety of health care providers;</li> <li>• Mechanisms for conflict resolution;</li> <li>• Interdisciplinary professional development;</li> <li>• Shared decision-making; and</li> <li>• Clear understanding of scope of practice and team role.</li> </ul>	Provider Survey	No		NPS could be potentially expanded to partially report on PHC FP/GP providers.



**SUPPORT 3: Information technology that is adapted to primary health care and links primary health care organizations with the rest of the health care system**

INDICATOR NUMBER	INDICATOR DEFINITION	LIKELY DATA SOURCE	CURRENT AVAILABILITY OF DATA SOURCE	EXISTING OR POTENTIAL DATA SOURCE	COMMENTS
100	% of PHC organizations who primarily use electronic systems to complete their professional tasks.	Organization Survey	No		NPS could be potentially expanded and modified to partially report on PHC FP/GP solo and group practice organizations.
101	% of PHC organizations that currently use a variety of electronic communications modalities in the exchange of health care information with other PHC providers.	Organization Survey	No		NPS could be potentially expanded and modified to partially report on PHC FP/GP solo and group practice organizations.
102	% of PHC organizations who currently have two-way electronic communication linkages (beyond fax and telephone) with other health care organizations (e.g. hospitals, community mental health agencies, LTC facilities, public health).	Organization Survey	No		NPS could be potentially expanded and modified to partially report on PHC FP/GP solo and group practice organizations.

**SUPPORT 4: Needs-based resource allocations for primary health care**

INDICATOR NUMBER	INDICATOR DEFINITION	LIKELY DATA SOURCE	CURRENT AVAILABILITY OF DATA SOURCE	EXISTING OR POTENTIAL DATA SOURCE	COMMENTS
103	Average annual per capita operational expenditures of PHC services for: <ul style="list-style-type: none"> <li>• Health human resources; <ul style="list-style-type: none"> <li>– Family Physicians/ General Practitioners;</li> <li>– Nurse Practitioners;</li> <li>– Other PHC providers;</li> </ul> </li> <li>• Supplies;</li> <li>• Equipment;</li> <li>• Administration/overhead; and</li> <li>• Other.</li> </ul>	Other Administrative	No		Health expenditure data required.



**SUPPORT 5: Provider payment methods that align with primary health care goals**

INDICATOR NUMBER	INDICATOR DEFINITION	LIKELY DATA SOURCE	CURRENT AVAILABILITY OF DATA SOURCE	EXISTING OR POTENTIAL DATA SOURCE	COMMENTS
104	% of PHC providers who were primarily remunerated by the following method over the past 12 months by type of provider: <ul style="list-style-type: none"> <li>• Fee for service;</li> <li>• Salary;</li> <li>• Capitation; and</li> <li>• Mixed System.</li> </ul>	Provider Survey	Yes, Partial	NPS	Only available for FPs/GPs.
105	Average % of PHC provider income derived from each of the following PHC funding models for one fiscal year, by type of PHC provider: <ul style="list-style-type: none"> <li>• Fee for service;</li> <li>• Salary;</li> <li>• Capitation; and</li> <li>• Mixed system.</li> </ul>	Provider Survey	Yes, Partial	NPS	Only available for FPs/GPs.

**SUPPORT 6: Ongoing support from policy makers for primary health care**

Other analytic approach required for all evaluation questions in Support 6.





# Appendix E

## List of Organizations Surveyed and Key Informant Interviews

This appendix includes a list of the organizations and individuals who agreed to be interviewed as part of the information gathering phase of the project.

### *A) International Survey*

COUNTRY	ORGANIZATION(S) INTERVIEWED
Australia	Bettering the Evaluation and Care of Health (BEACH) Project and Australian General Practice Statistics and Classification Centre
	Australian Primary Health Care Research Institute (APHCRI)
	Primary Health Care Research and Information Service Flinders University
Netherlands	Netherlands Institute for Health Services Research (NIVEL)
New Zealand	New Zealand Ministry of Health, Primary Health Organization (PHO) Performance Management Programmes
United Kingdom	Health Care Commission
United States	National Committee for Quality Assurance (NCQA) – The Health Plan Employer Data and Information Set (HEDIS) Program



**B) Pan-Canadian Scan**

<b>ORGANIZATION INTERVIEWED</b>	<b>DATA SOURCE REVIEWED</b>
Canada Health Infoway	Various Initiatives
Canadian Institute for Health Information (CIHI)	Discharge Abstract Database (DAD)
	Health Human Resource Database Development Project (HHR-DDP)
	Hospital Morbidity Database (HMDB)
	Licensed Practical Nurses Database (LPNDB)
	National Ambulatory Care Reporting System (NACRS)
	National Physician Database (NPDB)
	National Physician Survey (NPS)
	National Prescription Drug Utilization Information System (NPDUIS)
	Registered Nurses Database (RNDB)
	Scott's Medical Database
Health Canada/Public Health Agency of Canada	Canadian Immunization Registry Network (CIRN)
	National Diabetes Surveillance System (NDSS)
Statistics Canada	Business Register
	Canadian Community Health Survey (CCHS)
	Canadian Health Measures Survey (CHMS)
	National Longitudinal Survey of Children and Youth (NLSCY)
	National Population Health Survey (NPHS)
	Participation and Activity Limitation Survey (PALS)



**C) Provincial/Territorial Scan**

PROVINCE	ORGANIZATION INTERVIEWED	DATA SOURCE REVIEWED
Alberta	Government of Alberta, Alberta Health and Wellness	Alberta Health Care Insurance Plan, Physicians and Nurse Practitioners
		Alberta Blue Cross
	Health Quality Council of Alberta	Satisfaction with Health Care Services. A Survey of Albertans 2004
British Columbia	Government of British Columbia, Ministry of Health	British Columbia Medical Services Plan (MSB)
		British Columbia Pharmacare
		British Columbia Pharmanet
Manitoba	Government of Manitoba, Manitoba Health	Manitoba Physician Claims
		Manitoba Midwives Data
		Manitoba Pharmacare
		Manitoba Drug Programs Information Network (DPIN)
New Brunswick	Government of New Brunswick, New Brunswick Health and Wellness	New Brunswick Physician Claims
		New Brunswick Perkingie
		New Brunswick Claimnet
		New Brunswick Community Health Centre Patient Survey
		New Brunswick Community Health Centre Provider Survey
Newfoundland and Labrador	Government of Newfoundland and Labrador, Department of Health and Community Services	Newfoundland Medical Care Plan
		Newfoundland Client and Referral Management System
		Newfoundland Prescription Drugs
		Newfoundland and Labrador Client/Patient Satisfaction Survey
		Newfoundland Team Effectiveness Tool
		Newfoundland Scope of Practice



**C) Provincial/Territorial Scan (cont'd)**

PROVINCE	ORGANIZATION INTERVIEWED	DATA SOURCE REVIEWED
Newfoundland and Labrador (cont'd)	Newfoundland and Labrador Centre for Health Information	Newfoundland and Labrador Diabetes Collaborative
		Newfoundland Unique Personal Identifier and Client Registry
	Newfoundland and Labrador Statistics Agency	Newfoundland Community Accounts
Northwest Territories	Government of the Northwest Territories, Department of Health and Social Services	Northwest Territories Physician Claims
		Northwest Territories Territorial Hospital Information System
		Northwest Territories Health Suite
		Northwest Territories Prescription Drug and Dental Benefits
Nova Scotia	Government of Nova Scotia, Department of Health	Nova Scotia Medicare
		Nova Scotia Pharmacare
	Government of Nova Scotia, Department of Finance	Nova Scotia Community Counts
Nunavut	Government of Nunavut, Department of Health and Social Services	Nunavut Physician Billing Data
		Nunavut Community Health Reporting Database
		Nunavut Prescription Drug Program
Ontario	Government of Ontario, Ministry of Health and Long-Term Care	Ontario Health Insurance Plan
		Ontario Drug Benefit Program
		CHC MIS Program Evaluation System
		Physician Group Record Database
		Corporate Provider Database (CPDB)
		Laboratory Inspection and Licensing Information Database (LILI)
		Laboratory (LABRYNTH) System





***C) Provincial/Territorial Scan (cont'd)***

<b>PROVINCE</b>	<b>ORGANIZATION INTERVIEWED</b>	<b>DATA SOURCE REVIEWED</b>
Ontario (cont'd)		Registered Persons Database (RPDB)
		Provincial Health Planning Database
		Active Physician Registry
		Immunization Records Information System (IRIS)
		Reportable Disease Information System (RDIS)
		Cervical Screening Program (Cytobase)
		Physicians and Surgeons Database
		Community Health Centre MIS Program Evaluation System
	Primary Care Access Survey Patient Survey	
Prince Edward Island	Government of Prince Edward Island, Ministry of Health	Prince Edward Island Physician Billing Data
		Prince Edward Island Drug Cost Assistance Formulary
		Prince Edward Island A1C Data
		Prince Edward Island Patient Survey
		Prince Edward Island Provider Survey
		Prince Edward Island Organization Survey
Saskatchewan	Government of Saskatchewan, Saskatchewan Health	Saskatchewan's Medical Services Dataset
		Saskatchewan's Prescription Drug Dataset
		Saskatchewan's Prescription Information Program (PIP)
		Saskatchewan Client Satisfaction Survey
		Saskatchewan Team Effectiveness Tool
		Saskatchewan's Primary Health Services Qualitative Questionnaire
		Saskatchewan's Primary Health Services Program Description Form
Yukon	Government of Yukon, Department of Health and Social Services	Yukon Health Care Insurance Plan (YHCIP)
		Yukon Drug Claims System



***D) Key Informant Interviews***

<b>INDIVIDUAL INTERVIEWED</b>	<b>TITLE</b>	<b>ORGANIZATION/AFFILIATION</b>
Bob Bernstein	Professor of Family Medicine and Medical Director	Medical Informatics Research Group, Department of Family Medicine, University of Ottawa and Medical Director, Elizabeth Bruyere Pavilion, Family Medicine Centre
Lynnette Nilan	Director of Performance Measures	Veterans Health Administration, U.S.
Morgan Price	Clinical Assistant Professor and Lead	Faculty for Informatics, University of British Columbia Family Medicine
Matt Stiefel	Associate Executive Director	Care Management Institute, Kaiser-Permanente, U.S.
Sandra Tomkins	Senior Policy Analyst	Primary and Continuing Health Care Division, Health Canada



# Appendix F

## List of PHC Indicator Development Project Participants and Method of Participation

LAST NAME	FIRST NAME	ORGANIZATION AFFILIATION	WORKING GROUP** OR ADVISORY COMMITTEE INVOLVEMENT	CONSENSUS CONFERENCE ATTENDANCE	MODIFIED DELPHI SURVEY PARTICIPATION
Achilles	Sheila	Saskatoon Health Region	–	Attended second conference	Participated
Armstrong	Pat	York University	–	Attended first conference	–
Austin	Stephanie	Health Canada	–	Attended second conference	Participated
Barnes	Marsha	Ontario Ministry of Health and Long-Term Care	Advisory	–	–
Barre	Louis	Manitoba Health	–	Attended first conference	–
Barrett	Juanita	Newfoundland and Labrador Department of Health and Community Services	Advisory	Attended first and second conferences	Participated
Belhadji	Bachir	Health Canada	Advisory, Group B, DCI	Attended second conference	Participated
Bergman	June	University of Calgary	Group C (Lead)	Attended first and second conference	Participated
Booth	Hazel	Yukon Department of Health and Social Services	Group B	Attended second conference	Participated
Boyne	John	New Brunswick Health and Wellness	Group A	Attended first conference	Participated
Brauer	Paula	University of Guelph	–	Attended second conference	Participated
Briggs	Tom	Howard Research and Management Consulting Inc.	–	Attended second conference	Participated



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LAST NAME	FIRST NAME	ORGANIZATION AFFILIATION	WORKING GROUP** OR ADVISORY COMMITTEE INVOLVEMENT	CONSENSUS CONFERENCE ATTENDANCE	MODIFIED DELPHI SURVEY PARTICIPATION
Broemeling	Anne-Marie	Interior Health Authority	Group A	Attended first and second conferences	Participated
Burnett	Dawn	Canadian Physiotherapy Association	–	–	Participated
Bustros	Jeanine	Health Canada	Advisory	Attended second conference	Participated
Cadotte	Barbara	Ontario Ministry of Health and Long-Term Care	–	–	Participated
Cesa	Frank	Health Council of Canada	–	Attended second conference	Participated
Charlton	Pat	Prince Edward Island Ministry of Health	–	Attended second conference	Participated
Chaudhuri	Nandita	Saskatchewan Health	Advisory*	Attended first conference	–
Coady	Regina	Newfoundland and Labrador Department of Health and Community Services	Group D	Attended first and second conference	Participated
Darcovich	Nancy	Statistics Canada	Advisory, Group A	Attended first and second conference	Participated
Dean	Christopher	Canadian Council on Health Services Accreditation	–	Attended first conference	–
DeHart	Lindsay	Yukon Department of Health and Social Services	Group B	Attended first conference	–
Dietrich	Linda	Dietitians of Canada	–	–	Participated
El-Jardali	Fadi	Health Council of Canada	–	Attended first conference	–
Forth	Mehrún	Nunavut Department of Health and Social Services	Group C	Attended second conference	Participated



LAST NAME	FIRST NAME	ORGANIZATION AFFILIATION	WORKING GROUP** OR ADVISORY COMMITTEE INVOLVEMENT	CONSENSUS CONFERENCE ATTENDANCE	MODIFIED DELPHI SURVEY PARTICIPATION
Fronzi	Lucy	Group Health Centre	Group B	Attended first and second conference	Participated
Gass	David	Dalhousie University	Group C	Attended first and second conference	Participated
Grace	Melanie	Canadian Association of Social Workers	Advisory	Attended second conference	Participated
Greeley	Gogi	Nunavut Department of Health and Social Services	–	Attended first conference	–
Groff	Phil	SmartRisk	–	–	Participated
Guttmann	Astrid	Institute for Clinical Evaluative Sciences	Group A (Lead)	Attended first and second conference	Participated
Haggerty	Jeannie	Université de Sherbrooke	Advisory	Attended first and second conference	Participated
Horton	Jan	Yukon Department of Health and Social Services	–	–	Participated
Hasselback	Paul	Interior Health Authority	Group B, DCI	Attended first and second conference	Participated
Howard	Jennifer	Women's Health Clinic Inc.	Group D	Attended first and second conference	Participated
Howard	Peggy	Howard Research and Management Consulting Inc.	Group C, DCI	Attended first conference	Participated
Hutchison	Brian	McMaster University	Advisory (Chair)	Attended first and second conference	Participated
Jaakkimainen	Liisa	Institute for Clinical Evaluative Sciences	Group C, DCI	Attended first and second conference	Participated
Jackson	Beth	Health Canada	–	Attended second conference	Participated



LAST NAME	FIRST NAME	ORGANIZATION AFFILIATION	WORKING GROUP** OR ADVISORY COMMITTEE INVOLVEMENT	CONSENSUS CONFERENCE ATTENDANCE	MODIFIED DELPHI SURVEY PARTICIPATION
Jeffers	Betty	Alberta Health and Wellness	Advisory	-	-
Johnston	Riley	Ontario Ministry of Health and Long-Term Care	-	Attended first conference	-
Jones	Wayne	Continuous Enhancement of Quality Measurement in Primary Mental Health Care	DCI	-	-
Katz	Alan	University of Manitoba	Advisory	Attended first and second conference	Participated
Klaiman	Donna	Canadian Association of Occupational Therapists	-	Attended second conference	Participated
Klomp	Helena	Health Quality Council	-	Attended second conference	Participated
Knock	Marian	Canadian Nurses Association	Advisory	-	Participated
Krakowski	Vivian	Saskatchewan Health	-	Attended second conference	Participated
Lafferty	Vicki	Northwest Territories Department of Health and Social Services	Group A	Attended first and second conference	Participated
Landry	Shan	Saskatoon Health Region	-	Attended first conference	-
Lapierre	Louise	Canadian Health Services Research Foundation	-	Attended first and second conference	Participated
Lapointe	Luc	Canadian Lung Association	Group C	Attended first conference	-
Levesque	Jean-Frederic	Institut national de santé publique de Québec	Group A	Attended first and second conference	Participated
Lillie	Donna	Canadian Diabetes Association	-	Attended first conference	Participated



LAST NAME	FIRST NAME	ORGANIZATION AFFILIATION	WORKING GROUP** OR ADVISORY COMMITTEE INVOLVEMENT	CONSENSUS CONFERENCE ATTENDANCE	MODIFIED DELPHI SURVEY PARTICIPATION
Lin	Elizabeth	Centre for Addiction and Mental Health	-	Attended second conference	Participated
Livadiotakis	Georgia	Health Canada	Group B	Attended first conference	-
MacDonald	Don	Newfoundland and Labrador Centre for Health Information	DCI	-	-
MacDonald	Jane	Canadian Nurses Association	-	Attended second conference	Participated
MacKinnon	Neil	Dalhousie University	Group C	Attended first conference	Participated
Martin	Carmel	University of Ottawa	Group D	Attended first and second conference	Participated
Maxted	John	The College of Family Physicians of Canada	Advisory	Attended second conference	Participated
McEwan	Kimberley	British Columbia Ministry of Health	Group C	Attended first conference	Participated
McKim	Bob	Capital Health Authority	-	Attended second conference	Participated
Melanson	Margaret	Canadian Association of Speech-Language Pathologists and Audiologists	-	Attended second conference	Participated
Millar	John	Provincial Health Services Authority, British Columbia	-	Attended first and second conference	Participated
Miller	Carol	Canadian Physiotherapy Association	-	Attended second conference	Participated
Miller	Margaret	Health Canada	Group A	Attended first and second conference	Participated



LAST NAME	FIRST NAME	ORGANIZATION AFFILIATION	WORKING GROUP** OR ADVISORY COMMITTEE INVOLVEMENT	CONSENSUS CONFERENCE ATTENDANCE	MODIFIED DELPHI SURVEY PARTICIPATION
Moy Lum-Kwong	Margaret	Heart and Stroke Foundation	-	-	Participated
Muttitt	Sarah	Canada Health Infoway	DCI	-	-
Nakagawa	Bob	Health Council of Canada	-	Attended second conference	Participated
O'Maonaigh	Conleth	Memorial University of Newfoundland	Group A	Attended first conference	Participated
Oldford	Karen	Labrador-Grenfell Regional Integrated Health Authority	Group D	Attended second conference	Participated
Pentland	Nettie	Manitoba Health	Group D	Attended first and second conference	Participated
Persaud	Vena	Ontario Ministry of Health and Long-Term Care	Group B	Attended first conference	-
Phillips	Robin	Prince Edward Island Ministry of Health	Group B	Attended first conference	-
Pong	Raymond	Laurentian University	Group B	Attended second conference	Participated
Robbins	Carl	Memorial University of Newfoundland	-	Attended first and second conference	Participated
Roberts	Glen	Conference Board of Canada	Group B	Attended first and second conference	Participated
Rosborough	Louise	Health Canada	Advisory, Group B	Attended first and second conference	Participated
Roston	Barbara	Ontario Ministry of Health and Long-Term Care	Group A	Attended first and second conference	Participated
Rourke	Jim	Memorial University of Newfoundland	Advisory	-	Participated





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LAST NAME	FIRST NAME	ORGANIZATION AFFILIATION	WORKING GROUP** OR ADVISORY COMMITTEE INVOLVEMENT	CONSENSUS CONFERENCE ATTENDANCE	MODIFIED DELPHI SURVEY PARTICIPATION
Russell	Anna	Alberta Health and Wellness	–	Attended first and second conference	Participated
Seguin	Michel	Statistics Canada	DCI	–	–
Service	John	Canadian Psychological Association	Group C	Attended first and second conference	Participated
Sharp	Marsha	Dietitians of Canada	Advisory <sup>†</sup>	–	Participated
Shosenberg	Nancy	Canadian Institute of Child Health	–	Attended first and second conference	Participated
Spidel	Mark	Prince Edward Island Ministry of Health	Group B	Attended second conference	Participated
Stasiuk	Sonya	Capital Health Authority	Group B	–	Participated
Stewart	Marianne	Capital Health Authority	–	Attended first conference	–
Stewart	Moira	University of Western Ontario	Group D	Attended first and second conference	Participated
Strachan	Jill	Canadian Institute for Health Information	DCI	Attended first and second conference	Participated
Stranc	Leonie	Manitoba Health	–	Attended second conference	Participated
Teare	Gary	Health Quality Council	–	Attended first conference	–
Tousignant	Pierre	McGill University	Group B (Lead)	Attended first and second conference	Participated
Tregillus	Valerie	British Columbia Ministry of Health	–	–	Participated
Ugolini	Cristina	Saskatoon Health Region	–	Attended first and second conference	Participated



LAST NAME	FIRST NAME	ORGANIZATION AFFILIATION	WORKING GROUP** OR ADVISORY COMMITTEE INVOLVEMENT	CONSENSUS CONFERENCE ATTENDANCE	MODIFIED DELPHI SURVEY PARTICIPATION
Ungurain	Merv	Nova Scotia Department of Health	Advisory	Attended first and second conference	Participated
Vail	Stephen	Canadian Medical Association	–	Attended second conference	Participated
Vayda	Eugene	University of Toronto	–	Attended first and second conference	Participated
Vissandjee	Bilkis	University of Montreal	–	Attended second conference	Participated
Vyse	Roberta	Manitoba Health	Group B	Attended first conference	Participated
Waraich	Paul	University of British Columbia	–	Attended first conference	–
Watson	Diane	Centre for Health Services and Policy Research, University of British Columbia	Advisory	Attended second conference	Participated
Williment	Melissa	Nova Scotia Department of Health	Group D	Attended second conference	Participated
Wong	Sabrina	University of British Columbia	Group D (Lead)	Attended first and second conference	Participated

\* Moved to new organization and resigned from Advisory Committee in September 2005.

† Joined in September, 2005.

**\*\* Working Groups**

- Group A – Accessibility, Responsiveness and Needs Based Allocation
- Group B – Integration, Coordination and Health Human Resources
- Group C – Quality of Services
- Group D – Scope of Services and Whole Person Care
- DCI – Data Collection Infrastructure



# Appendix G

## Acronyms

CCHS	Canadian Community Health Survey
CHI	Canada Health Infoway
CIHI	Canadian Institute for Health Information
DCI	Data Collection Infrastructure
EHR	Electronic Health Record
EMR	Electronic Medical Record
ENCODE-FM <sup>®</sup>	Electronic Nomenclature and Classification of Disorders and Encounters for Family Medicine
FPs/GPs	Family Physicians/General Practitioners
F/P/T	Federal/Provincial/Territorial
FTE	Full Time Equivalent
HHR-DDP	Health Human Resources Databases Development Project
HL7	Health Level Seven
ICD	International Classification of Diseases
ICPC	International Classification of Primary Care
ISO	International Standards Organization
LPN	Licensed Practical Nurse
MIS	Management Information System
NES	National Evaluation Strategy
NPDB	National Physician Database
NPDUIS	National Prescription Drug Utilization Information System
NP	Nurse Practitioner
NPS	National Physician Survey
NSWHN	National Survey of the Work and Health of Nurses
OT	Occupational Therapist
PHC	Primary Health Care
PHCTF	Primary Health Care Transition Fund
PT	Physiotherapist
RN	Registered Nurse
SNOMED CT	Systematised Nomenclature of Medicine Clinical Terms
UPI	Unique Personal Identifier
VHA	Veterans Health Administration





# Appendix H

## End Notes

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