Roadmap Initiative...
Launching the Process
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Revised March 2000
The Roadmap Initiative is a collaborative effort between the Canadian Institute for Health Information (CIHI), Statistics Canada (STC), Health Canada and a number of key stakeholder groups, including provincial and territorial health ministries, to meet priority health information requirements that serve to improve public health and the quality of Canada’s health system.

Your input and feedback is key to ensuring that the Roadmap Initiative contributes to better health and a stronger health system for Canadians. Comments or queries can be faxed or mailed to:

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Preamble

**Roadmap Implementation Commitments**

Roadmap partners concur that Roadmap Initiative projects must:

- Support or facilitate the generation of information which serves to improve the health of Canadians or the quality, cost-effectiveness and accessibility of health care services in Canada;

- Provide a foundation for measuring performance and outcomes linked to health care and a better understanding of the non-medical determinants of Canadians’ health;

- Enable the creation, analysis and dissemination of the best possible “evidence” from across Canada and around the world as a basis for informed decisions by patients, citizens, informal caregivers, health professionals, providers, managers, and policy makers; and

- Assist individuals and communities to make informed choices about their own health, the health of others and the future of Canada’s health system.

Roadmap partners concur that the implementation of the Roadmap Initiative projects and activities will be guided by the following principles:

**Information as a Public Resource**

- Advancing the public interest will be the driving force behind all Roadmap Initiative projects.

- Roadmap projects will support informed public debate and promote evidence-based decision making.

**Openness and Transparency**

- Roadmap partners will take steps to ensure that research outcomes are shared widely with interested publics.

- Roadmap partners will respond to requests for information/updates on the status of projects in a timely and comprehensive manner.

**Consultation and Collaboration**

- Roadmap partners will seek and welcome input and advice from interested publics and will provide timely opportunities for them to express their views/opinions on proposed or completed projects.

- Roadmap partners will provide periodic reports on the status of their Roadmap projects to facilitate informed public discussion.

**Commitment to Data Protection and Individual Privacy**

- Roadmap partners pledge to respect personal privacy and safeguard the confidentiality of individual records.

- Roadmap partners will provide a secure environment for information systems under their respective management.
Table of Contents

Why Health Information Matters ........................................................................................................... 1

How Healthy Is Canada’s Health Care System? .................................................................................... 1

How Healthy Are Canadians? .............................................................................................................. 2

The Roadmap Initiative—Its Evolution ................................................................................................. 2

Foreword ................................................................................................................................................ 4

A Reports and Indicators Projects .................................................................................................... 4
   A–1 Health Indicators .......................................................................................................................... 4
   A–2 Health Reports and Special Studies ............................................................................................. 5

B Integrated Health Services Projects .............................................................................................. 5
   B–1 Discharge Abstract Database (DAD)/Morbidity Database Enhancements ......................... 5
   B–2 Canadian Organ Replacement Register (CORR) Enhancement ............................................ 5
   B–3 National Trauma Registry (NTR) Enhancement .................................................................... 6
   B–4 Therapeutic Abortions Database (TADB) Enhancement ......................................................... 6
   B–5 Enhancements to the Canadian Cancer Registry .................................................................... 6
   B–6 Canadian Joint Replacement Registry (CJRR) Development ............................................. 7
   B–7 ICD-10-CA/CCI Implementation ............................................................................................ 7
   B–8 ICIDH-2 (Beta-2 Research) ...................................................................................................... 8
   B–9 Controlled Clinical Vocabularies, Feasibility Study ................................................................. 8
   B–10 Grouping Methodology Redevelopment .............................................................................. 8
   B–11 Canadian Resource Intensity Weights Development ............................................................. 9
   B–12 Prescription Drug Utilization Standards and Reports Development ................................. 9
   B–13 Home Care, National Indicators and Reports Development ............................................ 10
   B–14 Adult Inpatient Rehabilitation Services, National Indicators and Reporting System .......... 10
   B–15 Continuing Care, National Indicators and Reports Development ....................................... 10
   B–16 Mental Health/Addictions Services, National Indicators and Reports Development ........... 11
   B–17 National Ambulatory Care Reporting System (NACRS) Implementation ....................... 11
   B–18 Data Quality Enhancement .................................................................................................... 11

C Health Resources Management Projects ....................................................................................... 12
   C–1 National Health Expenditure Database (NHEX) Enhancement .............................................. 12
   C–2 Annual Hospital Survey (AHS) Enhancement ......................................................................... 12
   C–3 MIS Guidelines Enhancement .................................................................................................. 13
   C–4 Physician Resource Databases Enhancement and Analysis ............................................... 13
   C–5 Registered Nurses Database (RNDB) Enhancement ............................................................... 13
   C–6 Allied Health Professions Database Development .................................................................. 14
Table of Contents (cont’d)

D Infostructure and Technical Standards Projects ............................................ 14
  D–1 National HL7 Implementation and Education ........................................... 14
  D–2 National Data Model and Dictionary ....................................................... 14
  D–3 Unique Identifiers Development ............................................................... 15
  D–4 International Health Informatics Standards Development ..................... 15
  D–5 National Public Key Infrastructure (PKI) Framework for Health ............. 15
  D–6 Privacy and Data Protection Development .............................................. 16
  D–7 Geographic Infrastructure ........................................................................ 16

E Population Health Projects .......................................................................... 17
  E–1 Vital Statistics Development ................................................................. 17
  E–2 Health Status Outcomes .......................................................................... 17
  E–3 Canadian Community Health Survey (CCHS) ......................................... 18
  E–4 Person Oriented Information (POI) .......................................................... 18
  E–5 Canadian Population Health Initiative (CPHI) ......................................... 19

Conclusion ............................................................................................................. 22

Appendix A—Supporting Documentation .......................................................... A–1
Part One: Overview

Why Health Information Matters
Canadians spend over $80 billion a year on health care. However, a number of stakeholders have indicated concern for the future of the health care system. Some say it needs more money, while others say we are spending in the wrong places. Some argue the system needs to be privatized and others argue against that. The truth is, we can’t come up with long term solutions until we have a better understanding of what the problems really are. The Roadmap Initiative’s aim is simple—better information for better health and health care.

The Roadmap Initiative is designed to enable us to provide clear, confident answers to two basic questions:
- How healthy is Canada’s health care system?
- How healthy are Canadians?

How Healthy Is Canada’s Health Care System?
We are in the age of laser surgery and telehealth, yet our approach to health information is still far too close to that of the ledger or the log. Separate systems stand in isolation. Data on some issues are gathered, but on others they are not. Moreover, much of the data we gather cannot be easily analyzed or shared.

Better health information is essential if we are to have an integrated health system. A system that enables us to identify emerging needs or vulnerable populations, so that preventive actions can be taken. A system that effectively links the full range of services—from prevention to primary care, to hospital care, to home or community care, to mental health services, to long term and palliative care. A system that enables us to track how individuals navigate their way through these services, and with what results.

Better health information is essential if we are to have a system premised on evidence-based decision making. A system that integrates health care knowledge with information technology to promote learning and innovation. A system where “best practices” are identified and shared. A system where useful data are gathered, transformed into information, and made available in a timely way to those who require it.

Better health information is essential if we are to have a flexible system. A system that reduces costs and improves access by focussing on patient needs. A system that allows planners and decision makers to make the right investments so that the right intervention is provided by the right provider, at the right time, and in the right place.

And better health information is essential if we are to have a system that empowers patients by giving them a greater role in shaping the health system, understanding their options, making choices, and in maintaining and improving their own health.
How Healthy Are Canadians?
This second question is broader, and speaks to the basic objectives of the system: is the health of Canadians improving? It requires us to look beyond the health care system, asking questions like: How does health status differ as a result of non-medical determinants of health, such as gender, ethnicity, socioeconomic status, and place of residence? How have improvements in health varied across groups? How do factors like employment, working conditions, nutrition, and housing affect our health? How important has the social environment, including community and family supports, been in sustaining our health? What about the physical environment and lifestyle risk factors? Addressing these non-medical determinants may lead us to further gains in health and reductions in health inequalities, which cannot be achieved by the health system alone.

The ability to answer these questions and to compare the contributions to our health of modern medicine versus that of other, non-medical factors, will allow individual Canadians, health service providers, and politicians alike to make better informed decisions.

Information systems therefore need to be built so that we can track health factors (including health care) regionally, provincially, and nationally.

The Roadmap Initiative—Its Evolution
In early 1998, the Federal Minister of Health’s Advisory Council on Health Infostructure, the Canadian Institute for Health Information (CIHI) and Statistics Canada (STC) brought together some 550 health administrators, researchers, caregivers, government officials, health advocacy groups and consumers to identify Canada’s health information needs. The result of these consultations was a national vision and action plan for strengthening Canada’s health information system.

Among the priorities identified was the need to:

- Better track information on major current and emerging health issues;
- Reach consensus on common data and technical standards to enable researchers to more easily share comparable findings and results;
- Address problems of fragmented or incomplete data;
- Improve the analysis of health information being captured; and
- More broadly disseminate health information in order to realize its potential for improving the health of Canadians and of their health care system.

In late 1998, this vision for health information was presented to and endorsed by the Federal, Provincial and Territorial (F/P/T) Conference of Deputy Ministers of Health. To give expression to this vision, which subsequently became known as the Roadmap Initiative, the 1999 Federal Budget identified a number of specific priority projects and activities in the health information field and earmarked $95 million over the next four years toward their completion. These contributions will be used to expand or accelerate certain ongoing national health information initiatives and to support new ones.
The Roadmap Initiative is a collaborative effort between CIHI, Statistics Canada, Health Canada and many other key groups at all levels—national, regional and local. CIHI’s Board has accepted fiduciary responsibility for Roadmap funds provided by Health Canada. A variety of expert/advisory structures has been created to provide expert advice on individual projects and the implementation of the Initiative, including project priorities and sequence, to assist in appropriate liaison with the provinces and territories and other key stakeholders, and to promote and foster health information system implementation opportunities throughout the country.

In addition, particular attention is being paid to accessing existing networks and infrastructures, both for spreading information about the Initiative and for receiving the necessary inputs to ensure relevance. For example, the Conference of Deputy Ministers’ Advisory Committees on Health Services, Health Human Resources, Population Health and Health Infostructure have been, and will continue to be, involved in the implementation and progress of the Initiative. Thus, the Roadmap Initiative will seek to avoid duplication of effort, it will be open, and it will build on existing expertise and projects.
Part Two: Roadmap Project Summaries

Foreword
The Roadmap Initiative comprises a large number of projects, of which some are relatively small, while others, such as the Canadian Population Health Initiative and the Canadian Community Health Survey, are much more ambitious. Some will result in new databases being established, or existing ones expanded, in emerging areas of health care. Others will seek to foster better data and technical standards for gathering information and for data protection. Still others will focus on obtaining consensus on the indicators and determinants of good health. Almost all of these projects will involve collaborative efforts with key stakeholders at the local, regional, provincial/territorial and national levels. Securing stakeholder participation at the front-end of the process, and throughout the project implementation phase, is critical to ensuring that the outcomes are relevant, practical and contribute to improving the health of Canadians and of the health system. Accordingly, consultations have been and will remain an ongoing feature of the Roadmap Initiative.

The following project summaries provide the rationale for each Roadmap project and the expected deliverables. For more detailed information on project implementation plans, please consult the Health Information Roadmap pages of the CIHI web site at www.cihi.ca. The CIHI web site will provide periodic project status reports and will include a feedback section to enable you to convey your views on a particular project directly to its manager. Your input and feedback is key to ensuring that the Roadmap Initiative contributes to better health and a stronger health system for Canadians.

A Reports and Indicators Projects

A–1 Health Indicators
In 1998, over 500 people—health administrators, researchers, caregivers, government officials, health advocacy groups, and consumers—were brought together to identify health information needs. One of their priorities was comparable quality data on key health indicators for health and health services.

In response to the consultations, CIHI and Statistics Canada have launched a collaborative process to identify what measures should be used to report on health and the health system - and then to share this information with Canadians from coast-to-coast. The goal of this project is to support Regional Health Authorities in monitoring progress in improving and maintaining the health of the population and the functioning of the health system for which they are responsible through the provision of quality comparative information on:

- The overall health of the population served, how it compares to other regions in the province and country, and how it is changing over time;
- The major non-medical determinants of health in the region;

1 The Roadmap is designed to enable Canadians to build comprehensive, reliable health information while respecting the privacy of individuals and maintaining the confidentiality of data. This document identifies what work will be done and how it will be organized. The strategic framework, which describes how it will all fit together, is outlined in the Appendix to this document.
- The health services received by the region’s residents; and
- Characteristics of the community or the health system that provide useful contextual information.

A–2 Health Reports and Special Studies
Health and health care have consistently been rated by Canadians among the most important public issues in recent surveys. In the broad-based 1998 health information needs consultations, key health stakeholders identified better analysis and dissemination of information on health and the health system as a top priority. The goal of this project is to enhance CIHI’s analysis and dissemination capacity. In doing so, CIHI will:

- Work with key partners in producing independent regular (annual) health reports;
- Produce targeted special studies that address emerging issues; and
- Leverage the wealth of health information that exists (and is being developed).

B Integrated Health Services Projects

B–1 Discharge Abstract Database (DAD)/Morbidity Database Enhancements
The Discharge Abstract Database contains acute care data from a large number (over 85%) of Canadian hospitals. The data generated are essential for determining, among other things, the length of hospital stays, the number and types of procedures performed, the relative consumption of services and so on. These data are invaluable for hospital administrators, physicians and health care funders. For instance, if average hospital stays for certain surgeries are falling, while post-operative complication rates are rising, this may signal a need to re-think the type and level of care provided. Significant variance in regional data on such trends may also signal a need for further research, or for sharing best practices. The goal of this project is to enhance the future use and application of the Discharge Abstract and Morbidity databases. Specific objectives include:

- To review, refine and finalize a standardized minimum data set (and related data definitions) that meet the needs of users;
- To develop/implement electronic dissemination of data and comparative reports;
- To develop a comprehensive editing system that ensures high quality data; and
- To develop more meaningful outputs from the data.

B–2 Canadian Organ Replacement Register (CORR) Enhancement
The Canadian Organ Replacement Register (CORR) is a national database that records, analyzes and reports on the level of activity and outcomes of vital organ transplantation and renal dialysis activities. The register tracks long term trends for organ transplantation, organ donation and dialysis activity, and makes comparative data available that can facilitate better treatment decisions. The goal of this project is to enhance the acquisition and dissemination of data from the Canadian Organ Replacement Register. Specific objectives include:
To enhance national data submission policies and procedures, standards, analysis and reporting;
To develop and obtain consensus on a minimum data set;
To develop electronic tools to capture, analyze and disseminate electronic data, including web-based reporting and data capture; and
To enhance analysis and value-added outputs.

B–3 National Trauma Registry (NTR) Enhancement
Injuries (or trauma) are the leading cause of death for Canadians under the age of 45 and are also among the leading causes of disability. The economic burden for Canada resulting from trauma is $14 billion annually. Yet it is estimated that 90% of injuries are preventable. The National Trauma Registry currently provides trauma care providers, researchers and injury prevention coalitions with information on trauma in Canada. However, these national injury statistics are incomplete and of limited scope. Better information on trauma would enable trauma prevention coalitions and care providers to better target their public education or outreach campaigns toward vulnerable populations or high-risk activities. It would also facilitate research on ways to improve trauma treatment and access to trauma care. **The goal of this project is to enhance the National Trauma Registry by providing additional information on injury in Canada.** Specific objectives include:

To enhance national data submission policies and procedures, standards, analysis and reporting for comprehensive and death data sets;
To develop and obtain consensus on meaningful comprehensive and death data sets; and
To enhance analysis and value-added outputs.

B–4 Therapeutic Abortions Database (TADB) Enhancement
The Therapeutic Abortions Database contains data relating to therapeutic abortions performed on Canadian women. The available data are currently gathered from a variety of sources, and data inputs vary accordingly. **The goal of this project is to integrate data collection for therapeutic abortions performed in hospitals and private clinics.** Specific objectives include:

To facilitate reporting requirements for privately owned/operated clinics;
To review/revise electronic data collection tools for distribution to clinics;
To obtain consensus on minimum data set from all clinics;
To integrate data collection for abortions performed in hospitals through DAD; and
To improve data quality and timeliness.

B–5 Enhancements to the Canadian Cancer Registry
The outcome of cancer treatment is greatly affected by the stage of the disease when interventions first occur. The Canadian Cancer Registry, a key information component in cancer research, needs to be enhanced, so that it can accept data on diagnoses, medical, surgical and therapeutic interventions, as well as the associated costs and outcomes.
The goal of this project is to enhance the Canadian Cancer Registry to accept additional data to promote analysis of survival and efficiency of treatment. Specific objectives include:

- To assess the completeness and quality of existing information; and
- To increase the amount of information that is collected for each patient to include stage of cancer diagnosis.

**B–6 Canadian Joint Replacement Registry (CJRR) Development**

More than 37,000 hip and knee joint replacements are performed each year in Canada. With our aging population, and with more procedures now being performed on younger, active Canadians, the number of surgeries is rising. However, these surgeries are not always successful: it is estimated that somewhere between 10–12% of joint replacement recipients in Canada require subsequent replacements due to problems related to wear, fixation or breakage of their implants. We can only estimate the scale of this problem, because, unlike some other countries, we do not collect data on outcomes. The goal of this project is to develop a new registry that will track information on hip and knee replacements performed in Canada. The CJRR will provide information that:

- Is relevant and useful in supporting evidence-based decision making to improve the quality of care for joint replacement recipients;
- Facilitates change in practice patterns including a reduction in revision rates with system-wide cost savings;
- Allows for post market surveillance of medical devices and technologies; and
- Facilitates the evaluation of access to care.

**B–7 ICD-10-CA/CCI Implementation**

ICD-10 is the World Health Organization’s international standard for reporting on diagnoses and other health problems. CCI is a Canadian classification system developed by CIHI, that allows the capture of detailed information on health interventions received by clients. Adopting these new reporting standards will enable policy makers to better assess the relative strengths and limitations of their health care systems, identify emerging trends, and take corrective action. More importantly, it will allow us to compare the performance of health systems across the country. The goal of this project is to implement ICD-10-CA/CCI at CIHI and facilitate implementation in jurisdictions across Canada. Specific objectives include:

- To assist provinces in piloting ICD-10-CA/CCI;
- To complete Canadian enhancements to ICD-10;
- To facilitate stakeholders’ readiness to submit, process and/or receive CIHI products or services impacted by new standards;
- To facilitate longitudinal comparability of information collected before and after transition to ICD-10-CA/CCI; and
- To develop national processes for maintenance and enhancement of ICD-10-CA/CCI.
B–8 ICIDH-2 (Beta-2 Research)
Just as there is value in capturing and sharing information on health trends within and across Canada, there is also value in being able to compare our results with those of other countries. To facilitate this process, the World Health Organization (WHO) has developed standards for identifying and reporting on certain health trends. One standard is known as the International Classification of Impairments, Disabilities and Handicaps (ICIDH). An effort is now under way to modernize the now 20-year-old ICIDH, currently being referred to as the International Classification of Functioning and Disability. The goal of the ICIDH-2 Beta-2 Research project is to contribute to the international revision process of ICIDH-2 in collaboration with the North American Collaborating Center (NACC) and WHO. Specific objectives include:

- Designing and developing field testing protocols for the Beta 2 version of ICIDH-2;
- Coordinating and supporting field testing in Canada (in both official languages);
- Compiling, analyzing and reporting on the results of Beta-2 field testing in Canada; and
- Communicating/disseminating results of field trials to stakeholders.

B–9 Controlled Clinical Vocabularies, Feasibility Study
Achieving consensus on standards is critical to building a modern health information system. This means ensuring that the things we measure, how we measure them, the quality of the data we gather and the mechanisms that enable us to share results, are uniform across the country. The goal of this project is to conduct a feasibility/advisability study of using controlled clinical vocabularies (e.g. READ, SNOMED) to facilitate capture of data in primary care settings. Specific objectives include:

- To assess utility and clinical acceptance of selected controlled clinical vocabularies;
- To identify potential implementation considerations; and
- To identify minimal functional specifications for controlled clinical vocabularies in Canada.

B–10 Grouping Methodology Redevelopment
Grouping methodologies allow patients with similar attributes to be identified and compared. Grouping methodologies can improve health care by allowing researchers to compare the outcomes of various treatment options between different types of patients or between similar patients in different health care settings. The goal of this project is to redevelop existing grouping methodologies (e.g. CMG\textsuperscript{TM}, DPG\textsuperscript{TM}, CAC\textsuperscript{TM}) to accept ICD-10-CA/CCI data. Specific objectives include:

- To evaluate impact of crosswalks/conversions on current grouping methodologies;
- To integrate crosswalks/conversions into current grouping methodologies;
- To redevelop grouping methodologies using ICD-10-CA/CCI data (using 2001/2002 data); and
- To integrate redeveloped grouping methodologies into CIHI information system infrastructure.
**B–11 Canadian Resource Intensity Weights Development**

Everyone agrees with the principle that our health system should deliver cost-effective services. However, determining whether or not services are being delivered “cost-effectively” requires access to comparable cost information from a number of sources. With the increasing availability of Canadian cost data, it is important that we make use of the data (as opposed to continuing to rely on U.S. data). The goal of this project is to evaluate and use Canadian cost data to develop weights (e.g., RiW™) for inpatient and ambulatory care. Specific objectives include:

- To identify potential sources of Canadian cost data in inpatient acute care and ambulatory care settings;
- To identify means to increase and/or exclusively employ Canadian cost data in existing weighting methodologies; and
- To develop weights in service settings, such as ambulatory care, where Canadian based weights have not been developed.

**B–12 Prescription Drug Utilization Standards and Reports Development**

The past two decades have witnessed the introduction of a myriad of new pharmaceutical products that have revolutionized medicine. Not surprisingly, as the effectiveness of drug therapies has grown, so too has their share of overall health spending in Canada; they constitute the fastest growing element of health spending in Canada. Yet we currently collect very little information on what drugs are being prescribed, by whom, in what amounts and at what cost. The goal of this project is to build on the work of the Advisory Committee on Health Services (ACHS) to study the feasibility of national standards for reporting of prescription drug utilization data. Specific objectives include:

*Phase 1—Publicly insured pharmaceuticals*

- To identify user requirements.
- To develop standards, prototype database, and reporting system (pilot study).
- To assess the possibility of establishing a national drug utilization information system.

*Phase 2—Beyond publicly insured pharmaceuticals*

- To identify indicators beyond publicly insured drugs.
- To identify required data and data sources.
- To conduct demonstration pilot to produce indicators and reports.
B–13  Home Care, National Indicators and Reports Development
Answering fundamental questions about the health of Canadians and of our health care system requires better data on how individuals move through the system, and with what results. We currently collect good data on some services, such as hospitalization. But we also have significant gaps in other areas of health care that are growing in importance, such as home care. The goal of this project is to develop a core set of national priority indicators to support the evaluation of home care services at the provincial/territorial/regional levels. These indicators will be used for national comparative reporting.

Specific objectives include:

- To obtain agreement on priority indicators for home care;
- To identify data needed to support indicators, using standardized data definitions and elements; and
- To test and evaluate recommended indicators.

It should be noted that components of this project are being funded through the Health Transition Fund (HTF).

B–14  Adult Inpatient Rehabilitation Services, National Indicators and Reporting System
Significant gaps exist in the information currently available on the scope and results of rehabilitation services in Canada. The goal of this project is to develop a core set of priority indicators to support the evaluation of inpatient, facility-based rehabilitation services at the provincial/territorial/regional levels. Specific objectives include:

- To obtain agreement on priority indicators for inpatient, facility-based rehabilitation services;
- To identify data needed to support indicators, using standardized data definitions and elements;
- To develop and promote outputs/reports; and
- To develop a prototype database and reporting system.

B–15  Continuing Care, National Indicators and Reports Development
In order to effectively allocate scarce resources, health care decision makers need to better understand how to forecast demand for different types of services. They also need to be able to review trends and adapt “best practices” from other jurisdictions. The goal of this project is to develop a core set of national priority indicators to support the evaluation of continuing care services at the provincial/territorial/regional levels. These indicators will be used for national comparative reporting. Specific objectives include:

- To obtain agreement on priority indicators for continuing care;
- To identify data needed to support indicators, using standardized data definitions and elements; and
- To test and evaluate recommended indicators.
B–16 Mental Health/Addictions Services, National Indicators and Reports Development

Another important gap in the health information we gather concerns reporting systems for mental health and addiction services. The goal of this project is to develop a core set of national priority indicators to support the evaluation of mental health and addictions services at the provincial/territorial/regional levels. Specific objectives include:

- To obtain agreement on priority indicators for mental health and addictions services;
- To identify data needed to support indicators, using standardized data definitions and elements; and
- To test and evaluate recommended indicators.

B–17 National Ambulatory Care Reporting System (NACRS) Implementation

A significant shift in Canadian health care has been the shift from inpatient, usually hospital-based care to outpatient settings (e.g. clinics, day surgery, emergency wards, and home). More and more of our health care—from diagnostic services to physiotherapy—is being administered outside hospitals. As medical researchers harness advances in information and communications technology to create promising innovations in health care delivery such as telehealth and telehomecare, this trend will continue. At present, only limited data are being gathered on how much and what type of health care is being delivered outside hospitals, by whom, and with what results. The goal of this project is to promote national adoption of CIHI’s National Ambulatory Care Reporting System. Specific objectives include:

- To promote national collection of ambulatory care data;
- To support pilot projects or full provincial implementation initiatives;
- To enhance the NACRS minimum data set;
- To develop and deliver education programs; and
- To finalize the Comprehensive Ambulatory Care System (Grouper) methodology.

B–18 Data Quality Enhancement

An ongoing challenge for any organization producing statistical information is to ensure that the quality of the information it produces is suited to its intended uses, and that data users are provided good information about data quality. The goal of this project is to enhance the quality of existing data holdings and ensure that new data holdings information products meet high standards of quality consistent with program objectives. Specific objectives include:

- To engage in continual improvement of CIHI’s data quality framework and its implementation;
- To support CIHI program areas in determining data quality priorities, implementing improvements to data quality, and identifying areas where special projects on data quality are desirable;
- To conduct special studies evaluating data quality of administrative data by returning to original sources of information and independently assessing them; and
- To design, develop and implement methodologies to provide users with information on the quality of the data being collected, stored and processed by CIHI.
C  Health Resources Management Projects

C–1 National Health Expenditure Database (NHEX) Enhancement
The NHEX provides a broad overview of how Canadians and their governments spend over $80 billion annually on health care. NHEX classifies health expenditures by funding sources (e.g. private versus public) and categories of spending (e.g. physicians versus drug therapies). As health delivery systems continue to evolve, particularly with respect to services delivered outside of hospitals, it is essential that the NHEX remains a current and reliable source of data on which to base policy decisions. The goal of this project is to enhance the NHEX database to ensure its continued relevance and usefulness in supporting accurate macro level analysis of Canadian health spending. Specific objectives include:

- To identify current and emerging issues;
- To assess the relative importance of identified issues to the National Health Expenditure Database;
- To reconcile differences in the classification of health expenditures;
- To identify and correct data quality issues; and
- To implement enhancements/modifications to database.

C–2 Annual Hospital Survey (AHS) Enhancement
The Annual Hospital Survey database contains financial and operational data on Canadian hospitals. This data, collected annually from provincial/territorial ministries of health, regional health authorities and individual hospitals, is based on the MIS Guidelines chart of account structure. Data from the survey is used for the evaluation of health services, analysis of health expenditures, the system of National accounts, and international comparisons. The goal of this project is to enhance the Annual Hospital Survey to ensure its continued relevance and usefulness to stakeholders. Specific objectives include:

- To enhance the AHS technical infrastructure to facilitate future enhancements and to respond to emerging needs;
- To assess current and emerging stakeholder information needs for hospital data;
- To implement a data quality framework to increase data accuracy;
- To develop and implement a plan to enhance value-added reporting of AHS data; and
- To facilitate stakeholder access to AHS data.
C–3 MIS Guidelines Enhancement
The MIS Guidelines provide a standardized framework for collecting and reporting financial and statistical data on health services. The goal of this project is to ensure that the MIS Guidelines continue to be relevant and useful to users, both in terms of content and support mechanisms. Specific objectives include:

- To enhance MIS Guidelines to meet user needs across the continuum of health services; and
- To develop tools and mechanisms to more effectively support implementation of the standards.

C–4 Physician Resource Databases Enhancement and Analysis
The National Physician Database (NPDB) contains socio-demographic and billing information on fee-for-service physicians, as well as patient age and sex data. As a primary feature of NPDB, the unique physician identifier allows for the tracking of physicians across provinces and over the years. The Southam Medical Database (SMDB) contains demographic and practice information on clinical and non clinical physicians in Canada. The goal of this project is to enhance the value of information derived from NPDB and SMDB. Specific objectives include:

- To enhance NPDB Phase 1 data collection to improve comprehensiveness of coverage;
- To conduct feasibility or advisability study of collecting diagnostic data;
- To complete technical enhancement to the databases to improve processing efficiency and timeliness of data;
- To integrate aggregate alternative payments data (where available) within present NPDB;
- To enhance existing reports and develop new value-added reports; and
- To conduct research to address current policy issues of relevance to stakeholders.

C–5 Registered Nurses Database (RNDB) Enhancement
The Registered Nurses Database contains demographic and employment information on nurses that are registered with the various national, provincial or territorial licensing bodies/authorities. The goal of this project is to enhance the value of information derived from the Registered Nurses Database. Specific objectives include:

- To review/document historical changes in methodologies used to edit data;
- To assess data quality and suggest enhancements to improve the analytical potential of the database;
- To promote the use of a national Unique Nurse Identifier with key stakeholder groups; and
- To conduct special analytical studies to address current policy issues of relevance to stakeholders.
**C–6 Allied Health Professions Database Development**

Comprehensive, up-to-date information on the availability of various health professionals is a critical planning tool for health care decision-makers at all levels. The goal of this project is to deliver information on health human resources supply in Canada and in particular to improve the comprehensiveness of the data on the nursing profession by collecting information on Licensed Practical Nurses. Specific objectives include:

- To determine information requirements for development of national information system for licensed practical nurses;
- To develop and pilot test a prototype database for licensed practical nurses;
- To develop relevant analytical products from the prototype database; and
- To produce a national publication on counts of health professionals in Canada.

**D Infostructure and Technical Standards Projects**

**D–1 National HL7 Implementation and Education**

Health Level Seven (HL7) is a set of rules that allows different health service software applications to communicate with each other. Developed in 1987, HL7 has become the de facto standard for the electronic exchange of clinical and administrative data in health services. The goal of this project is to support provincial and territorial efforts relating to the implementation of HL7. Specific objectives include:

- To develop national HL7 implementation guidelines; and
- To develop and deliver educational material that is relevant to user needs.

**D–2 National Data Model and Dictionary**

The Conceptual Health Data Model (CHDM) is a reference tool for organizing high-level health information and data. The CHDM provides a framework within which to view and define health information. The goal of this project is to further enhance the CHDM developed by the Partnership for Health Information Standards. Specific objectives include:

- To map the Conceptual Health Data Model to an existing logical data model used by a significant number of stakeholders in Canada;
- To create and publish a standard data dictionary for CIHI entities and data elements; and
- To develop communication and education material to facilitate the use and acceptance of the CHDM.
D–3 Unique Identifiers Development
In the context of an integrated and decentralized health system, the ability to produce information that acts across functional, geographical and jurisdictional boundaries is extremely important. Historically, diverse stakeholders have independently designed information products to meet their own needs, resulting in inconsistencies in definitions and identifiers for similar data items. Presently, the lack of unique identifiers is a barrier to portability of benefits across jurisdictions. One of the key components required for the development of a national, integrated health information system is the ability to uniquely specify and link the health information of individuals, facilities and service providers. The goal of this project is to develop national methodologies for linking health information at the level of individuals, facilities, and health service providers through the use of unique identifiers. Specific objectives include:

- To conduct feasibility studies on the implementation of unique identifier methodologies for individuals, service providers and facilities; and
- To develop and pilot methodologies that will allow for the identification of individual providers and facilities across jurisdictions.

D–4 International Health Informatics Standards Development
Achieving consensus on standards is critical to building a modern health information system. This means ensuring that the things we measure, how we measure them, the quality of the data we gather, and the mechanisms that enable us to share results, are uniform across the country. It is equally important that we be able to compare the results of our findings with those of other countries—both to identify trends that may require prescriptive actions, or to identify best practices that improve the health of Canadians and of the health care system. The International Standards Organization (ISO) is the international body responsible for fostering international standards. The goal of this project is to ensure strong Canadian participation in the development of health informatics standards on the international scene. Specific objectives include:

- To promote Canadian health informatics standards in the international community; and
- To disseminate knowledge of international health informatics standards to Canadians and to use this knowledge in building Canada’s national health infrastructure.

D–5 National Public Key Infrastructure (PKI) Framework for Health
The goal of this project is to establish a national framework for the secure communication of health information in order to ensure confidentiality, integrity, authenticity and availability. All provinces and territories, as well as CIHI, will need a security infrastructure. Relevant components of this framework include:

- A PKI infrastructure, including policies to support it;
- Identification of potential Certificate and/or Registration Authorities;
- Cross-certification amongst the provinces; and
- Standards development.
D–6 Privacy and Data Protection Development
Privacy, the right of individuals to control information about themselves, is a fundamental concern. That right is increasingly defined by legislation. The public good of controlled access by health researchers to medical histories must be very carefully measured against the increasingly stringent privacy demands of the Canadian public and legislatures. The goal of this project is to further strengthen CIHI's position as a leader and responsible agent with respect to privacy and data protection practices. Specific objectives include:

- To review CIHI principles, policies, practices and documentation related to privacy and data collection, use and disclosure;
- To plan, develop and implement (if necessary) changes in CIHI policies and procedures;
- To negotiate and facilitate an external review process and prepare appropriate responses to the review; and
- To keep abreast of developments in federal, provincial and territorial legislation, policies and practices and assess implications for CIHI and its clients.

D–7 Geographic Infrastructure
During the consultation of the Federal Minister’s Council on Health Infrastructure, Statistics Canada and CIHI, the need for health information at the sub-provincial level was heard repeatedly. While great effort is required to generate a national health information system, we must never lose sight of the practical need to do comparative analysis at the local and regional level. The geographic infrastructure project is being developed with the goal of increasing accuracy, precision and consistency of geographic codes linked to health and health-related statistics. More specific objectives include:

Geo-coding project
- Increase quality of digital (supplementary) files provided by provincial vital statistics registrars. These files contain postal code and address information linked to events, and their completeness and accuracy of postal codes varies widely from province to province.
- Establish an ongoing project within the Vital and Cancer Statistics Section of Health Statistics Division at Statistics Canada, which will process annual birth and death files received, linking postal codes to latest standard geographic codes (to the finest level of geography possible)—initial resource requirements to reduce as incoming files improve.
- Complete development of automated system which standardizes source files, verifies postal codes and, where necessary, generates postal code from addresses.
Health region geography

- Define health region geography and create correspondence files to permit geo-coded data linkage to health regions.
- Create health region boundary files to facilitate mapping health and health-related statistics for spatial analysis and dissemination purposes.
- Develop an approach to keep up with health region limit changes in collaboration with provincial health ministries, and produce updates as required to health region correspondence files and health region boundary files.
- Develop a methodology for producing annual population estimates for health regions, to calculate rates on an annual basis for health data.

Geo-coding tool – Postal Code Conversion File (PCCF)\(^2\)

- Increase access to PCCF+, so that more health data producers (such as provincial, regional and local health departments and hospital research departments) can produce small area data using consistent methods and therefore comparable results.
- Build health region codes into the PCCF+ tool.
- Work together with Geography Division to influence quality of links on the Postal Code Conversion File, critical input file to the Health Statistics Division’s PCCF+.

E Population Health Projects

E–1 Vital Statistics Development

The goal of this project is to improve the accuracy, timeliness and quality of Canadian vital statistics data. The realisation of this goal will enhance efforts to use birth and death data in the development of health outcome indicators. Current objectives for vital statistics development include:

- To develop an education package for physicians and other health professionals to improve certification of the cause of death; and
- To provide technical assistance to provincial and territorial vital statistics registries of their data systems.

\(^2\) PCCF+ is an automated system which uses postal codes to assign census geography to health records. It is based on the latest Postal Code Conversion File and the Postal Code Population Weight File produced by the Geography Division of Statistics Canada. PCCF+ uses weights to allocate postal codes linked to multiple enumeration areas according to the distribution of population using a given postal code. For postal codes that do not match exactly to PCCF, the first two or three characters of the postal code are used to assign partial geographic identifiers to the extent possible. PCCF+ also generates full diagnostic and reference information for the records coded.
E–2 Health Status Outcomes
To answer the question of how healthy Canadians are, a way of measuring health has to be agreed upon so that comparisons can be made both over time and from region to region. That way of measuring needs to work at all levels, from local to national. The goal of this project is to develop a set of health status outcomes measures that will be used to monitor the health of the Canadian population over time. Specific objectives include:

- Consult with key expert, federal, provincial/territorial and community health region stakeholders to determine their needs;
- Coordinate with international organization the development or adaptation of health status measures; and
- Evaluate the psychometric properties of newly developed or adapted health status instruments through pilot tests or specially designed surveys.

E–3 Canadian Community Health Survey (CCHS)
Most of us know intuitively—that certain non-medical factors impact on our health and on the quality of care we receive. We know smoking and excessive drinking are bad for us. We know that certain populations suffer disproportionately from diseases like diabetes or anorexia. We know that there are links between income and life expectancy. We know that some groups rely on emergency room services more than others do. But what we don’t know is how these various indicators of health interact with one another. Better understanding these linkages will allow us to make further gains in improving the health of Canadians and reducing health inequities. The goal of this project is to provide reliable cross-sectional estimates of health determinants, health status and health system utilization for 132 health regions across Canada. Specific objectives include:

- To consult with key experts, federal, provincial and health region stakeholders to determine their data requirements;
- To develop a flexible survey instrument that will include three parts: common survey content, which will be asked of everyone in all regions of the country; optional survey content, which will vary from region to region and province to province; and focus survey content, which will include more detailed sections on topical issues of interest such as nutrition, physical measures and mental health;
- To begin data collection in September of 2000; data will be collected through computer assisted interviews, the bulk of which will be personal interviews; collection will take place over a twelve month period; and
- To ensure that data processing is efficient so that the results of the survey are released in a timely manner.

E–4 Person Oriented Information (POI)
The development of person-oriented information is an essential step toward the development of an integrated health information system. Currently, much of the data we gather are fragmented. Consider the case of an individual who has had a hip replaced. Hospitals compile data on the number of hip replacement procedures. But we currently have no way of tracking whether the surgery was successful, whether the patient successfully completed rehabilitation, how much rehabilitation he or she received and whether or not that person was able to go back to work.
POI is crucial to understanding how individuals fare in their contacts with the health care system. The goal of this project is to increase the capacity to combine health care data and to use this capacity to provide information on the health of Canadians and on the effectiveness, efficiency and responsiveness of our health care system. Specific objectives include:

- To create an inventory of the ability to do record linkage and a list of the most pressing health questions that can be addressed by a POI system;
- To collaborate on pilot projects across several provinces to develop person-oriented data;
- To develop in-house capacity;
- To examine major questions concerning the health of Canadians and the health care system; and
- To publish reports and articles.

E–5 Canadian Population Health Initiative (CPHI)
The Canadian Population Health Initiative (CPHI) will create new knowledge and enhance Canadians’ understanding about health and its broad determinants, including the health system which comprises the entire range of health interventions including health promotion, protection, disease prevention and care. CPHI will support the undertaking of policy relevant population health research and will stimulate debate and dialogue leading to improvement of the health and well-being of Canadians.

CPHI will mobilize intellectual leadership and promote collaborative strategies for population health by:

- Providing a critical focal point for national population health efforts at a time when health determinants have been identified by Ministers of Health as an increasingly important element of the health system of the future;
- Strengthening the capacity and opportunity of policy-makers, researchers, practitioners and the public across a broad cross-section of sectors to participate in developing strategies to improve the health of Canadians;
- Extending the reach of the health dialogue—and action—beyond the direct and traditional players, to others with more indirect but critical roles and strengthening and championing links among health, economic and social policy; and
- Developing knowledge that will generate ideas to improve decision making related to the determinants of health and health status as well as help guide the development of a population health information system and allocation of resources.

CPHI functions
As a key actor in population health, the key functions of CPHI will be to:

1) Generate New Knowledge on the Non-medical Determinants of Health
- Foster the development of a strong pan-Canadian network of expertise on population health research and analysis.
- Develop a policy relevant program of research and analysis that addresses current
gaps and identifies emerging issues in population health.

- Enhance the capacity for formulating population health research questions and hypothesis.
- Facilitate the development of research teams, support strategic research projects and programs, including collaboration with other research consortia, alliances and networks, and define research needs and priorities.
- Nurture the development of new research through support for new and innovative partnerships among diverse organizations, groups and researchers.
- Support skills development and training.

2) **Contribute to the Development of a National Population Health Information System and Infrastructure**

- Contribute to the development of a framework for a coherent and integrated population health information system.
- Create new prototypes and identify needed enhancements in population health information systems and infrastructure.
- Enhance the capacity of a population health information infrastructure to fulfil mandates and perform functions.
- Identify population health information requirements.
- Facilitate and collaborate in the collection of appropriate population health data.
- Contribute to the development of a strategy to integrate and link population health data.
- Facilitate access to and dissemination of information on population health.
- Promote the adoption of information technology to support use of population health data.

3) **Develop Reports on Aspects of the Health of the Nation and Stimulate Public Debate and Dialogue Through Outreach Activities**

- Provide leadership to develop and define a framework for describing population health and articulating the key elements of reporting instruments for population health, e.g. national reports on health.
- Develop reports for Canadians on population health status and outcomes, the determinants of health (including the health system) and their inter-relationships based on empirical evidence.
- Provide objective and credible information on population health issues, based on empirical evidence of the relationship between health and the determinants of health, that will stimulate public debate and dialogue, and lead to more informed decision-making and health gains.
- Improve public understanding of the factors that determine health of individuals, communities and the people of Canada as a whole.
4) **Support Analysis of Policy Options, for the Medium and Long Term, in the Public, Private and Voluntary Sectors**

- Contribute to the development of policy options, for the medium and long term, for population health goals, priorities, targets and strategies; while seeking always to be relevant to important issues of the day, CPHI will not advocate specific policies.
- Support state-of-the-art synthesis and analysis.
- Identify public policy issues in population health and support analysis of emerging issues and policy options, for the medium and long term, on the basis of experience and evidence in public, private and voluntary sectors.
- Contribute to priority-setting within the public policy arena through analysis of:
  - socio-economic and inter-regional inequities in health status
  - links to globalization, diminished public sector and economic restructuring.

**CPHI structure**

Through the funding of the Roadmap, CIHI was asked to take a leadership role in the implementation of CPHI. Within CIHI, CPHI will:

- Develop a new focus on population health;
- Develop a well functioning, peer reviewed grant funding program for population health research; and
- Support the analysis of policy implications and options, for the medium and long term, related to population health.

To this end, the CIHI BOARD will establish the CPHI COUNCIL as a committee of the BOARD to provide overall leadership and coordination and to ensure that CPHI achieves its vision, mandate and functions.

The structure of CPHI, which emphasizes an open and inclusive approach to population health initiatives, includes:

- The **CIHI BOARD**, responsible for fiduciary matters pertaining to CPHI, overseeing “due process” regarding the overall implementation of CPHI and monitoring for purposes of reporting progress and results;
- The **CPHI COUNCIL**, responsible for setting the vision and strategic directions of CPHI and the overall allocation of funds;
- The **CPHI Secretariat**, responsible for carrying out the directives and overseeing day to day operations of CPHI, including support for all CPHI functions and programs;
- **A CPHI Research Committee** responsible for overseeing and coordinating the research programs and the activities of the research nodes and advising the CPHI Council on the overall research agenda; and
- **Research nodes and project teams** responsible for conducting research initiatives within the parameters set by the CPHI COUNCIL.

The CIHI Board approved the CPHI structure in October 1999 and appointed members to the CPHI Council in January 2000.
Conclusion
The Roadmap Initiative is an exciting opportunity for Canadians to update their national health information systems, to enable significant strides in understanding how healthy our health care system is and how healthy we are. The task of building, securing and maintaining health information systems, and informing Canadians in the ways they want to be informed will be an ongoing challenge.

Critical to the Roadmap’s success will be the strong support and collaboration of provinces and territories, hospitals and other organizations which are the sources of much of the raw data needed to achieve Roadmap information objectives. To a very substantial degree, major benefits from the Initiative will be reaped when and to the extent that provinces, territories and other data suppliers make the necessary investments to adopt and implement standards and build the data collections processes that will support the Roadmap goals. CIHI and Statistics Canada have collaborated extensively with Deputy Ministers and senior health officials of the provinces and territories to ensure mechanisms are in place for their involvement and input, and that their information priorities and concerns are addressed. However, continuing collaboration and support is absolutely essential as Roadmap projects move from their design stage to initiation and implementation.

The Initiative will contribute to the health of Canadians and to the improvement of the health care system. It will provide a foundation for measuring performance and outcomes linked to health care and a better understanding of the non-medical determinants of Canadians’ health. It will enable the creation, analysis and dissemination of the best possible “evidence” from across Canada and around the world as a basis for informed decisions by patients, citizens, informal caregivers, health professionals, providers, managers, and policy makers. Finally, it will assist individuals and communities to make informed choices about their own health, the health of others and the future of Canada’s health system.
Appendix A
Roadmap Initiation Phase
During the Initiation Phase (i.e. April to September 1999), CIHI and Statistics Canada were actively involved in planning the launch of the Roadmap projects.

To this end, a Strategic Framework (see Diagrams 1 and 2) was developed to guide the work program and monitor achievements.

Strategic Framework
Strategic Framework components are:
- Health Information
- Research and Analysis
- Health Indicators Framework
- Standards
- Data holdings
- Infrastructure

In addition, communication, consultation, dissemination, as well as privacy, confidentiality and security are considered essential underpinnings of the Framework.
# Health Indicators Framework

## Health Status

<table>
<thead>
<tr>
<th>Health Conditions</th>
<th>Human Function</th>
<th>Well-Being</th>
<th>Deaths</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alterations of health status, which may be a disease, disorder, injury or trauma, or reflect other health-related states</td>
<td>Alterations to body functions/structures (impairment), activities (activity limitation), and participation (restrictions in participation)</td>
<td>Broad measures of physical/mental/social well-being of individuals</td>
<td>Age or condition-specific mortality rates and other derived indicators</td>
</tr>
</tbody>
</table>

## Non-medical Determinants of Health

<table>
<thead>
<tr>
<th>Health Behaviours</th>
<th>Living and Working Conditions</th>
<th>Personal Resources</th>
<th>Environmental Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aspects of personal behaviour and risk factors that influence health status</td>
<td>Socio-economic characteristics and working conditions of population that are related to health</td>
<td>Measures the prevalence of factors, such as social support and life stress, that are related to health</td>
<td>Environmental factors that can influence health</td>
</tr>
</tbody>
</table>

## Health System Performance

<table>
<thead>
<tr>
<th>Acceptability</th>
<th>Accessibility</th>
<th>Appropriateness</th>
<th>Competence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Care/service provided meets expectations of client, community, providers and paying organizations</td>
<td>Ability of clients/patients to obtain care/service at the right place and right time, based on needs</td>
<td>Care/service provided is relevant to client/patient needs and based on established standards</td>
<td>Individual's knowledge/skills are appropriate to care/service provided</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Continuity</th>
<th>Effectiveness</th>
<th>Efficiency</th>
<th>Safety</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ability to provide uninterrupted, coordinated care/service across programs, practitioners, organizations, and levels of care/service, over time</td>
<td>Care/service intervention or action achieves desired results</td>
<td>Achieving desired results with most cost-effective use of resources</td>
<td>Potential risks of an intervention or the environment are avoided or minimized</td>
</tr>
</tbody>
</table>

## Community and Health System Characteristics

Characteristics of the community or the health system that, while not indicators of health status or health system performance in themselves, provide useful contextual information.
Health Information
The ultimate objective of the Roadmap Initiative, as illustrated in the Strategic Framework, is to help improve the health of Canadians by reporting and providing needed information on a timely basis to those who can benefit from it—the public at large, our elected representatives and policy makers, researchers, health service providers, and the many other individuals and organizations concerned with health and health care.

In recent years, CIHI has made excellent progress in establishing a reputation as a credible, non-partisan source of highly relevant health information. Along with regular utilization reports for hospitals, the Institute has published an increasing number of releases highlighting major findings about health expenditures, health human resources, and the use of health services. For the past two years, CIHI and Statistics Canada have also partnered with Maclean’s magazine on producing fact-based health reports that reach millions of Canadians nation-wide. Both organizations also have contributed to other seminal health reports, for example the Second Report on the Health of Canadians.

With the additional resources now available through the Roadmap Initiative, the Institute and Statistics Canada will accelerate efforts to work with partners to put a broader range of health information into the hands of those who need it, when they need it, in a form that is useful to them. The core of these efforts will be regular reports on the health of the population and key factors that affect it, and on the Canadian health system.

Early publications will use data that are available today to explore topics such as changes in the health of Canadians, access to health care (including waiting times), efficiency and system management, and the appropriateness and results of health services. Over time, the reports will grow and change, taking advantage of emerging data holdings, indicators, and analysis. They will also be supplemented with a range of in-depth targeted special studies on topical issues (e.g. changes in caesarian section rates or health services in rural areas).

Research and Analysis
The foundation of effective reporting of health information is sound research and analysis. While extensive data currently exist and more are rapidly being developed, without putting the data into context—identifying trends, variations, and associations between different events—they are of little use.

The past decade has seen a significant expansion of analytical expertise in a series of world-class research centres across the country. Now, we must leverage this expertise and expand our capacity for national level analysis, comparing experiences across the country. Capacity-development is a long term effort. The Roadmap includes funding to initiate this process.

The Canadian Population Health Initiative (CPHI) will be a cornerstone of the Roadmap’s research and analysis efforts.
Another important research and analysis activity will relate to the development of more Person-oriented Information (POI). POI is an essential step toward the development of integrated health information and improving our understanding of how individuals fare in their contacts with the health system. For this reason, enhancing our capacity to provide Person-Oriented Information will be an underlying objective of many of the individual Roadmap projects.

Finally, first order descriptive analysis and studies conducted by both Statistic Canada and CIHI’s new Health Reports and Analysis division will also contribute in a significant manner to broadening and deepening our understanding of health and health care.

**Health Indicators Framework**

In Canada and internationally, health system managers and policy makers have identified better access to timely, standardized comparative health information as a priority. Historically, CIHI has produced regular comparisons of utilization patterns for hospitals and provincial/territorial reports on topics such as average payments for fee-for-service physicians. Statistics Canada has also compiled regular statistical reports and analyses from its data holdings.

The Roadmap Initiative provides resources to move together to the next level—an integrated set of standard indicators that draw from a variety of data sources to enable accurate comparisons of different regions of the country in terms of:

- overall health of the population in the region and how it is changing over time;
- major non-medical determinants of health in the region;
- health services received by the region’s residents; and
- characteristics of the community or the health system that provide useful contextual information.

Earlier this year, a national consensus conference was held to achieve agreement on an initial set of indicators in each of these areas. Compilation, verification, and reporting of comparative data are now in progress for the core indicators (see Figure 1). The plan is to pilot them at a regional level to ensure relevance and validity. Following the pilot, indicator data will be produced on an annual basis.

Over time, the core set of indicators will be refined and expanded (see Figures 2 to 4). The scope and utility of the indicators will also increase as new data are developed, benchmarks are established, and knowledge grows. Several Roadmap projects will contribute to filling important gaps in available indicators over the next four years. Potential areas for future development include expanded data on personal risk factors, early childhood development, waitlists, drug utilization, home care, and health expenditures.
Year 1 - First Comparative Regional-Level Data

Figure 1—FY 1999/2000

Year 1 - Additional Indicators

Figure 2—FY 1999/2000
Year 2

<table>
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Year 3

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</table>

Figure 3—FY 2000/2001

- Overweight †
- Arthritis, diabetes, asthma, depression †
- Chronic pain †
- Functional health †
- Disability-days †
- Activity limitations †
- Smoking rates †
- Youth smoking †
- Smoking initiation †
- Heavy drinking †
- Physical activity †
- Crime rates †
- Decision latitude at work †
- Influenza immunizations †
- Mammography, ≥ Age 50-69 †
- PAP smears, ≥ Age 16-69 †

Injury hospitalization outcomes (NTR Comprehensive Data Set)

Figure 4—FY 2001/2002

- Social support †
- Life stress

Breast conserving surgery (day surgery) **

Surgical day case rate (day surgery)**

Home care and regional health expenditures per capita (NHEX)

† Anticipated regional-level data from new CHS. Exact content still being determined

** Selected provinces only.

Year 2

* Indicates date that CIHI will be operationally ready to accept data. Actual data availability depends on implementation by local, regional, and/or provincial/territorial agencies.

** Selected provinces only.
Data Holdings
Answering fundamental questions about Canadians’ health and the health system requires a tactical and systematic approach to data collection, sharing and analysis. Specifically, the transition to person-oriented information requires that existing data holdings (both of health and health care) be augmented and that new data sources be built. These new and augmented data must be integrable, flexible and accessible. A number of projects under the Initiative will begin to address identified gaps in health services, outcomes and cost data, as well as ensuring that existing data sets are timely, flexible and continually improved to meet changing needs. These are described in the body of the text.

Standards
Canada’s health infostructure consists of a multitude of components being developed at local, regional, provincial/territorial, national and even international levels. In order for information to be shared between these systems and to ensure that our data are reliable and comparable no matter when or where they are collected, consistent data and technical standards are required. The Roadmap projects designed to accelerate the development of such standards to facilitate the sharing and analysis of data across jurisdictions are also described in the body of the text.

Infrastructure
Implementation of the Roadmap Initiative is expected to put significant pressures on CIHI’s existing infrastructure. To this end, CIHI has developed or enhanced a number of strategies to increase organizational capacity including:

- Human Resources Strategy
- Space/Physical Infrastructure Strategy
- Information Management/Information Technology (IM/IT) Strategy
- Communications and Consultations Strategy
- Education Program Strategy
- Privacy, Confidentiality and Security Strategy