

**HEALTH INFORMATION
TECHNOLOGIES
IN CANADA 1997**

SURVEY OF INITIATIVES IN PROGRESS

Prepared by: The Center for Health Information Infrastructure
For: The Office of Health and the Information Highway

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to help the people of Canada
maintain and improve their health
Health Canada

FOREWORD

This report on Canadian health information technology (IT) initiatives has been developed by the Centre for Health Information Infrastructure for the Office of Health and the Information Highway of Health Canada. It is intended for use as a reference document that provides a review of major ongoing initiatives rather than an inventory list of all current health IT endeavours in Canada.

The projects included in this document were chosen based on their scope, for example, major province-wide initiatives, or because they were representative of a number of similar initiatives, as is the case with several of the telehealth projects listed. Approximately 50 initiatives are included in this document. The information provided is based on interviews performed with key contacts, information searches and published reports. All information was confirmed and vetted by the suppliers of the information, before publication.

The report is divided into three major sections: provincially based initiatives, federal government activities and non-governmental organization (NGO) projects. In the case of provincial initiatives, which form the bulk of this document, the information was collated into a template format in an attempt to provide some ability to cross-reference material among provinces. However, it is important to note that not all figures are comparable. The information was collected in July 1997. It is “self-reported” and has not been adjusted to reflect the scope and/or status of ongoing projects. For example, funding figures may vary greatly among initiatives, or not be available at all. Thus, the reader must exercise caution when attempting to compare figures across or within provinces. A less standard format was used for federal government and NGO activities because of the nature of some of these projects. Although these endeavours are not the focus of this document, it was deemed important to provide a brief overview of what was occurring in these organizations.

Finally, as stated, this document is intended as a reference. It may therefore not be meant to be read “cover to cover.” We hope that the information presented under the different items will allow the reader to find a response to their questions easily.

TABLE OF CONTENTS

	Page
Foreword	i
PROVINCIAL INITIATIVES	1
NEWFOUNDLAND	1
Information Technology Strategic Plan Implementation	1
Community Health Information Management	3
Newfoundland and Labrador Centre for Health Information	4
Operation ONLINE Inc.'s Health Information System Initiative	7
PRINCE EDWARD ISLAND	9
Island Health Information System (IHIS)	9
Co-ordination and Continuity in Health Care (CoCo)	11
Pharmaceuticals Informatics Program (PhIP)	12
PEI System Evaluation Project	14
NOVA SCOTIA	17
Children's Telehealth Network	17
NEW BRUNSWICK	21
Wellness Network	21
Atlantic Health Sciences Corporation Imaging Network	
<i>Project #1 – Grand Manan Teleradiology Project</i>	22
Atlantic Health Sciences Corporation Imaging Network	
Project #2 – Region-Wide Imaging Network	25
Télé-Care/Télé-soins	27
QUEBEC	29
Inforoute Santé	29
ONTARIO	33
Smart System	33
Hospital for Sick Children TeleHealth Program	35
MANITOBA	37
Manitoba Health Information Network (HIN)	37

Table of Contents (cont'd)

Page

Drug Programs Information Network (DPIN) 39

Telemedicine Research and Development Pilot Project 40

SmartHealth 43

SASKATCHEWAN 45

 Saskatchewan Health Information Network (SHIN) 45

 Telehealth Pilot Projects 47

 Provincial Immunization Record System 48

 Newborn Registration System 50

ALBERTA 53

 Alberta Wellnet 53

 Remote Consultative Network Project 55

 Health Knowledge Network (HKN) 56

BRITISH COLUMBIA 59

 HealthNet/BC 59

 BC Health Information Standards Council 61

 Information Management Group (IMG) 63

NORTHWEST TERRITORIES 65

 Digital Communications Network (DCN) 65

YUKON 67

 Cornerstone 67

FEDERAL ACTIVITIES 69

 The National Forum on Health 69

 Health Canada 69

 National Population Health Clearinghouse (NPHC) 69

 National Health Surveillance System (NHSS) 72

 First Nations Health Information System (HIS) 74

 G7 Global Healthcare Applications Project 76

Industry Canada 77

 Health Industries Branch 77

 Telehealth Industry in Canada 78

NATIONAL HEALTH AND HEALTH-RELATED NGOS 81

Table of Contents (cont'd)

Page

Canarie 81
Canadian Institute for Health Information (CIHI) 83
Canadian Medical Association (CMA) 84
Canadian College of Health Service Executives (CCHSE) 86
Canadian Nurses Association (CNA) 87
Heart and Stroke Foundation of Canada 88
Alzheimer Society of Canada 89
Canada's Coalition for Public Information (CPI) 89
Canadian Public Health Association (CPHA) 91
Canadian Association for Quality in Health Care (CAQHC) 92
Royal College of Physicians and Surgeons of Canada (RCPSC) 93
HEALNet (Health Evidence Application and Linkage Network) 94
National Institute of Nutrition (NIN) 96

PROVINCIAL INITIATIVES

NEWFOUNDLAND

TITLE: *INFORMATION TECHNOLOGY STRATEGIC PLAN IMPLEMENTATION*

Goal: Implement various applications, based on decision and support functions, for monitoring the health sector.

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Lead Technology Agency: NewTel Information Solutions

Lead Health Agency: Newfoundland Department of Health

Geographic/Regional Area Covered: Provincial

Type of Initiative: Administrative

Applications:

- Budget information systems
- Capital budget
- Capital equipment
- Clinical database management
- Demographics reference
- Facility profile
- Financial planning
- Funding and monitoring
- Inspection scheduling

- Institutional budgeting
- Mortality
- Out-of-province claims
- Planning support
- Standards reference
- Third-party liability

Timeline of Project:	Presently in the last year of a five-year program; implementation is going more slowly than planned. The target to finish implementation is December 1997.
Funding:	Projected - \$3.2 million Spent to date - \$2.8 million
Status:	All applications listed above are either in progress or complete, except for planning support and financial planning, which are about to start.
Partners:	None
Key Issue:	Progress is slower than planned.
Description:	<p>The Information Technology Strategic Plan Implementation has been created for the implementation of various applications, based on decision and support functions, for monitoring the health sector in Newfoundland. As the principal health agency involved, staff of the Institutions Branch of the Newfoundland Department of Health are responsible for such monitoring, including the collection of management information system (MIS) statistics and financial transactions.</p> <p>The technology used is Centura SQL Windows and SQL Base with a target completion date of December 1997.</p>

TITLE:	<i>COMMUNITY HEALTH INFORMATION MANAGEMENT PROJECT (CHIM)</i>
Goal:	Implement an information management project in all community health offices.
Contact Name and Information:	Elizabeth Jones Project Leader Newfoundland Department of Health Tel: (709) 729-4405 Fax: (709) 729-5824 E-mail: ejones@health.gov.nf.ca
Lead Technology Agency:	NewTel Information Solutions
Lead Health Agencies:	Department of Health and regional community health boards
Geographic/Regional Area Covered:	Provincial
Type of Initiative:	Administrative
Applications:	<ul style="list-style-type: none">• Client and referral management• Community profile• Disease surveillance• Health promotion/community education• Programs monitoring• Schedule management• Staff education/pre-service education• Survey support
Timeline of Project:	Four years beginning April 1, 1997.
Funding:	\$5.4 million
Status:	Early stages of implementation.
Partners:	None

Key Issues:	N/A
Description:	<p>The goal of CHIM is to implement an information management project for each of the 100 community health offices in Newfoundland. The Newfoundland Department of Health and all the provinces' regional community health boards are involved in the project.</p> <p>The Department of Health is planning to use Oracle and Visual Basic technology to implement the eight principal applications that will deliver CHIM's goals: client and referral management, programs monitoring, community profile, disease surveillance, health promotion/community education, schedule management, survey support and staff education/pre-service education. NewTel Information Systems is the lead technology agency involved.</p>
TITLE:	<i>NEWFOUNDLAND AND LABRADOR CENTRE FOR HEALTH INFORMATION</i>
Goal:	Bring various existing health information systems together to establish an integrated and comprehensive information technology system for the Department of Health and Social Services.
Contact Name and Information:	Dr. Doreen Neville Chief Executive Officer Memorial University, Newfoundland Tel: (709) 737-6215 Fax: (709) 737-7382 E-mail: dneville@morgan.ucs.mun.ca
Lead Technology Agencies:	Close co-operation with the local information technology sector is expected as projects are developed.
Lead Health Agencies:	Department of Health and Social Services Health Care Corporation of St. John's Memorial University Centre for Health Research

Geographic/Regional Area Covered:	Provincial
Types of Initiatives:	Administrative Research
Applications:	<ul style="list-style-type: none">• Co-ordinating health information databases via consultation of all members of the health industry• Co-ordinating, monitoring, analyzing health data province-wide• Unique Identifier Project
Timeline of Project:	Unique Identifier Project proposal, September 1997 Implementation, February 1998.
Funding:	Unique Identifier Project - \$2 million (anticipated)
Status:	A strategic plan is now being developed for overall strategies for the Centre, along with administrative leadership from the new CEO.
Partners:	<ul style="list-style-type: none">▶ Association of Registered Nurses of Newfoundland▶ Department of Health▶ Department of Industry, Trade and Technology▶ Department of Social Services▶ Medical Care Plan (MCP)▶ Memorial University Medical School▶ Newfoundland and Labrador Medical Association▶ Private sector business representatives▶ Regional Health Boards of Newfoundland and Labrador Health Care Association▶ Treasury Board
Key Issues:	<ul style="list-style-type: none">- Accuracy- Confidentiality- Privacy- Reliability

Description

In July 1995, the Newfoundland Health System Information Task Force made several recommendations, including the need for a centre for health information. In 1996, the Newfoundland Department of Health expanded this recommendation to include social services. In October of that year, the Newfoundland and Labrador Centre for Health Information was officially announced, and in December, its board of directors was set up. With the appointment of a CEO in June 1997, the CEO and board are now developing goals and objectives.

The overall goal is to bring the various existing health information systems together to establish an integrated and comprehensive information technology system for health and social services in Newfoundland and Labrador. The local information technology sector is expected to be involved as projects are developed to reflect this goal. The Department of Health and Social Services, the Health Care Corporation of St. John's and Memorial University Centre for Health Research are the major health agencies involved at this early stage. Initiatives will focus on co-ordinating, monitoring and analyzing data province-wide and co-ordinating health information databases via consultation with all members of the health industry.

One of the first major tasks of the Centre is to ensure that a unique identifier is allocated for all health care social services. Developing a unique identifier for every citizen of Newfoundland will allow patient information from institutions and community health to be accessible in a database format.

Accuracy, reliability, privacy, confidentiality will all be key issues in the development of the Centre's ultimate goal — a new information system.

TITLE:	<i>OPERATION ONLINE INC.'S HEALTH INFORMATION SYSTEM INITIATIVE</i>
Goal:	Foster consortia to develop and commercialize products and services with application in the field of health information systems.
Contact Name and Information:	Terry Johnstone Director of Operations Cabot Place 100 New Gower Street, Suite 1220 St. John's, Newfoundland A1C 6K3 Tel: (709) 729-4230 or 729-6000 Fax: (709) 729-6075 E-mail: online@newcomm.net
Lead Technology Agencies:	To be determined
Lead Health Agency:	Newfoundland and Labrador Centre for Health Information
Geographic/Regional Area Covered:	Provincial
Type of Initiative:	Research and development
Applications:	To be determined
Timeline of Project:	N/A
Funding:	N/A
Status:	Pending action plan of the Newfoundland and Labrador Centre for Health Information.
Partners:	ONLINE Inc. comprises 20 senior officials representing Newfoundland's Information Technology sector.
Key Issues:	N/A

Description:

In March 1995, the Department of Industry, Trade and Technology announced the establishment of Operation ONLINE Inc., a joint industry–government task force with a mandate to prepare an action plan for a provincial information technology strategy. The purpose of Operation ONLINE Inc.’s Health Information System Initiative is to foster consortia among the local information technology industry, experienced international health information system providers and the regional health boards. The consortia will develop and commercialize products and services with application in the field of health information systems.

Operation ONLINE Inc. hopes to announce its health care initiatives in August 1997, pending progress of the newly established Newfoundland and Labrador Centre for Health Information.

The task force members, who represent Newfoundland’s information technology sector, are supported by a staff consisting of individuals from the private sector and relevant government agencies.

PRINCE EDWARD ISLAND

<i>TITLE:</i>	<i>ISLAND HEALTH INFORMATION SYSTEM (IHIS)</i>
Goals:	Provide support for service delivery processes, links between care providers, information for patient care, planning, evaluation and research.
Contact Name and Information:	Scott Bentley System Manager Island Health Information System 4 Sydney Street Charlottetown, Prince Edward Island C1A 7N8 Tel: (902) 368-6259
Lead Technology Agencies:	Cactus Medical Records Deltaware Systems Digital Equipment GSA Consulting Health Vision Corporation Island Tel – Telecommunications Oracle Corporation Whidden Systems
Lead Health Agencies:	Prince Edward Island Department of Health and all five regional health authorities
Geographic/Regional Area Covered:	Provincial
Type of Initiative:	Health Information Network
Applications:	Phase 1 applications: <ul style="list-style-type: none">• Admission discharge transfer• Clinical scheduling• Enterprise automation• Enterprise membership index (EMI)–unique identifier• Financial

- Institutional pharmacy
- Medical records
- Payroll/human resources
- A pharmaceutical information system is being implemented between phases 1 and 2.

Subsequent applications (Phase 2) include:

- Laboratory information system
- Nursing information system
- Social services delivery system

Timeline of Project: Phase 1 is complete (1993-1997). The pharmaceutical information system will be operating by September 1997.

Funding: \$6.8 million (Phase 1)

Status: Next phase will depend on available resources. Future priorities include:

- Concentrating on information (essential functions)
- Investing where possible
- Protecting investment.

Partners: None

Key Issues: Budget
Governance
Maintenance strategy
Security and confidentiality

Description: The purpose of the Island Health Information System (IHIS) is to provide health care stakeholders with support for service delivery processes, links among care providers, information for patient care, and information for planning, evaluation and research.

Phase 1 and the pharmaceutical information system are complete. The next phase will depend on available resources. Applications being considered include: a social services delivery system, a laboratory information system and a nursing information system. Future priorities include protecting the present investment, concentrating on

information (essential functions) and further investing where possible.

TITLE: *CO-ORDINATION AND CONTINUITY IN HEALTH CARE (CoCo)*

Goal: Provide the provincial government with a plan for the types of systems needed to “wire” primary care.

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Lead Technology Agencies: N/A

Lead Health Agency: Department of Health and Social Services

Geographic/Regional Area Covered: Provincial

Types of Initiatives: Policy
Research and development

Applications:

- Business process re-engineering (BPR) method
- BPR “Circle of Health” project

Timeline of Project: N/A

Funding: N/A

Status: N/A

Partners: N/A

Key Issues: N/A

Description: Prince Edward Island is currently reforming its health system to focus on primary care. CoCo focuses on business process re-engineering (BPR) for exchanging information in health systems via electronic means, in order to provide the provincial government with a plan and context for the types of systems needed to “wire” primary care. CoCo is uniquely adapting BPR techniques and information technology to coordinate the flow of information among hospitals and health service providers to achieve “more with less.”

In working closely with the Department of Health and Social Services, CoCo concentrates on such projects as technology infrastructure, BPR method and the BPR “Circle of Health” project.

TITLE: *PHARMACEUTICALS INFORMATICS PROGRAM (PHIP)*

Goal: Electronically link retail pharmacies, physician offices, hospital emergency rooms and pharmacies, and the Island Health Information System (IHIS).

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Lead Technology Agencies: N/A

Lead Health Agency:	Provincial government
Geographic/Regional Area Covered:	Provincial
Type of Initiative:	Pharmaceutical information network
Applications:	<ul style="list-style-type: none">• Patient compliance and product substitution monitoring• Policy development and management of provincial drug benefit programs• Prescription registration• Research into risks and cost effectiveness of medication
Timeline of Project:	A fall 1997 launch in pharmacies is planned.
Funding:	N/A
Status:	N/A
Partners:	<ul style="list-style-type: none">▶ College of Physicians and Surgeons▶ Medical Society (Prince Edward Island)▶ Pharmaceutical Association▶ Prince Edward Island Pharmacy Board
Key Issues:	N/A
Description:	<p>PhIP will electronically link retail pharmacies, physician offices, hospital emergency rooms and pharmacies, and the IHIS. As a tool for Prince Edward Island health practitioners, PhIP will facilitate the use of health information to contribute to better continuity of care and improved health and preventive care for all Prince Edward Island residents by maintaining patients' complete medication histories.</p> <p>This computerized medical information system will include three general applications. First, once physicians link to the system they will be able to access dispensed medication histories and to register prescriptions as they are written. Although these electronic prescriptions cannot be authorized legally, transmitted nor dispensed at this time (i.e.,</p>

electronically prescribed), a comparison of prescriptions written versus filled will provide information regarding patient compliance and product substitution. Second, from an administrative point of view, PhIP will contribute to the policy development and management of provincial drug benefit programs. And, from a social perspective, aggregate unidentifiable PhIP data may be used for statistical or research purposes, and studying benefits, risks and cost effectiveness of medication.

A fall 1997 launch of PhIP in pharmacies across the island is planned.

TITLE: *PEI SYSTEM EVALUATION PROJECT*

Goal: Evaluate the shift toward a population health focus and a decentralized or devolved system.

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Lead Technology Agencies: N/A

Lead Health Agency: Department of Health and Social Services

Geographic/Regional Area Covered: Provincial

Types of Initiatives: Policy
Research

Applications:	N/A
Timeline of Project:	1995 to 1998.
Funding:	\$500,000 over two years
Status:	Phase 1 involving data collection, i.e., surveys of all groups in the system and of the public, are now complete. Data analysis and sharing of results will occur for the remainder of Year 2.
Partners:	<ul style="list-style-type: none">▶ Consultants from the Centre for Health Economics and Policy Analysis▶ Health Canada▶ PEI Health and Social Services System
Key Issues:	N/A
Description:	<p>The PEI System Evaluation Project is an investment in an evidence-based approach to health reform and policy development. The project is evaluating the health and social services system in Prince Edward Island, in particular, the shift toward a population health focus and a decentralized or devolved system.</p> <p>There are four major steps involved in the project. The first application comprises a generic field-tested methodology that focuses on stakeholder input and utilization of results, which will be encompassed in Volume I of the project's major report. Next, specific instruments will be designed and used to measure some of the expected structural and process changes and the population health outcomes associated with health reform (Volume II). Third, the results from the evaluation of the Prince Edward Island Health and Community Services reforms will be applied, including interprovincial comparisons, to examine the effects of different models of reform. Last, decision support tools will be created to enhance the use of information by decision and policy makers.</p>

NOVA SCOTIA

TITLE:	<i>CHILDREN'S TELEHEALTH NETWORK</i>
Goal:	Provide remote specialist diagnosis to hospitals throughout the Maritimes.
Contact Name and Information:	Chris-Anne Ingram Site Co-ordinator, Children's Telehealth Network IWK Grace Children and Women's Health Centre Halifax, Nova Scotia Tel: (902) 428-8347 Fax: (902) 428-2938
Lead Technology Agencies:	Island Tel (Prince Edward Island) MT & T (Nova Scotia) NBTel (New Brunswick) TechKnowledge Healthcare Systems, Inc.
Lead Health Agency:	IWK Grace Children and Women's Health Centre, Halifax, Nova Scotia
Geographic/Regional Area Covered:	Maritime provinces
Type of Initiative:	Telemedicine
Applications:	High-performance, PC-based videoconferencing system that allows diagnostic information to be transmitted over high-speed data lines, such as pediatric oncology, pediatric radiology, pediatric cardiology (echocardiograms, patient education) and case conferencing
Timeline of Project:	Began March 1996.
Funding:	The IWK Foundation

Status:	The Children's Telehealth Network began with a base IWK site and three inaugural locations in March 1996, and is currently expanding to three more, for a total of seven. The equipment is in each of the new sites, and they will be up and running by September 1997.
Partners:	Base site: IWK Grace Health Centre, Halifax, Nova Scotia Three inaugural sites: <ul style="list-style-type: none">▶ Atlantic Health Sciences Corporation's Saint John Regional Hospital, Saint John, New Brunswick▶ Cape Breton Health Care Complex, Sydney Nova Scotia▶ Queen Elizabeth Hospital, Charlottetown Prince Edward Island Three expansion sites: <ul style="list-style-type: none">▶ Nor'est Réseau Santé Health Network, Bathurst New Brunswick▶ St. Martha's Regional Hospital, Antigonish Nova Scotia▶ The South-East Health Care Corporation, Moncton, New Brunswick
Key Issue:	Governance models — partnership versus hierarchical
Description:	<p>The goal of the Children's Telehealth Network is to provide remote specialist consultation from the IWK Grace Health Centre in Halifax, Nova Scotia to hospitals throughout the Maritimes. Normally, the only way to access specialized care in the Maritimes is for the child/family to travel to the IWK in Halifax, which can often prove time-consuming and costly. The Children's Telehealth Network is changing this through video-conferencing interfaced with medical devices and the capture and transmission of audio and visual information. Interdisciplinary teams and pediatric specialists also travel to other sites to conduct clinics.</p> <p>The technology is a high-performance, PC-based videoconferencing system that allows for diagnostic information to be transmitted over high-speed data lines. The information is digitized and transmitted directly to the physician using satellites or the public telephone networks. Physicians can input such information as patient data and</p>

requisition information, scan X-rays and capture colour images.

The Children's Telehealth Network began with three sites in March 1996, and is currently expanding to three more, for a total of seven, including the IWK site, where consultations take place. The equipment is in each of the new sites; they will be up and running by September 1997.

Each site has its own co-ordinator with the co-ordinator at the IWK acting as a central contact for each of the other site co-ordinators. There is a strong emphasis on true partnership among the participating hospitals, rather than a hierarchy model with IWK in the lead. This is to ensure that each hospital is in control of its own particular needs, a key concern for the success of the Network.

NEW BRUNSWICK

<i>TITLE:</i>	<i>WELLNESS NETWORK</i>
Goal:	Establish a private and secure communications network designed to serve the health industry.
Contact Name and Information:	Richard MacPhee Wellness Network 1 Brunswick Square St. John, New Brunswick E2L 4K2 Tel: (506) 694-2000 Fax: (506) 632-4285 E-mail: nbrmacph@health.nb.ca
Lead Technology Agency:	NBTel InterActiv
Lead Health Agencies:	Designed in consultation with the New Brunswick health care industry/contracted by the various hospital corporations in the province.
Geographic/Regional Area Covered:	Provincial
Type of Initiative:	Provincial health information network
Applications:	<ul style="list-style-type: none">• Access to hospital information systems• E-mail and directory Internet access• Internet links to a variety of health-related information worldwide• Multimedia clinical collaboration• Radiology diagnosis in the radiologist's home• Telehealth – CT scan, MRI, teleradiology• Other applications in progress include telehealth applications such as cardiology and partnerships with IWK Grace in Halifax, Nova Scotia. Online CME is also being investigated.

Timeline of Project:	Began in 1992.
Funding:	N/A
Status:	All hospitals in New Brunswick are now on-line and 15% of the province's doctors are actively using the Network. This number is expected to improve significantly.
Partners:	N/A
Key Issues:	Some of the key features of the Wellness Network are its security, navigation and user profile capability. In this regard, constant efforts are being made to increase these services, especially as available content expands and more people participate.
Description:	The Wellness Network is a private and secure communications network designed to serve the health industry and LAN-connected health participants in New Brunswick. This is a pay-as-you-go network, enabling each hospital to control what services it wants, at low cost access, with a trouble-free infrastructure. NBTel InterActive designed the Wellness Network in 1992 in consultation with the New Brunswick health care industry. The various hospital corporations in the province contract with the Wellness Network for only those services they want, which allows each facility to tailor its own information package.
TITLE:	<i>ATLANTIC HEALTH SCIENCES CORPORATION IMAGING NETWORK Project #1 – Grand Manan Teleradiology Project</i>
Goals:	Provide immediate access to specialist support for the physician and use technology to improve film interpretation.
Contact Name and Information:	Kenneth Baird Atlantic Health Sciences Corporation Teleradiology Network

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St. John, New Brunswick E2L 4L2
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Lead Technology Agency:

TecKnowledge Inc.

Lead Health Agency:

Atlantic Health Sciences Corporation, Saint John Regional Hospital

Geographic/Regional Area Covered:

Grand Manan Island, New Brunswick

Type of Initiative:

Telemedicine

Applications:

- Clinician consultation support, enabling the physician on Grand Manan to seek specialist consultation
- PC-based software/hardware package consisting of a film digitizer and sending station (Grand Manan)
- 2k x 2k monitor and review station (Saint John Regional Hospital)

Timeline of Project:

Established in 1995.

Funding:

Secured through hospital corporation funding.

Status:

This project has more than met the goals and objectives established for it. Perhaps nothing illustrates this better than the fact that the time it normally took to receive a diagnostic report in Grand Manan was reduced from 10 days to 24 hours. It continues to be the operational method for radiology services to Grand Manan today.

Partners:

- ▶ Grand Manan Hospital
- ▶ Saint John Regional Hospital
- ▶ TecKnowledge Inc.

Key Issues:

N/A

Description:

There are two sub-projects that make up the Atlantic Health Sciences Corporation's Imaging Network, the Grand Manan Teleradiology Network and the Region-Wide Imaging Network (see next entry in this document).

The goal of the Grand Manan Teleradiology Network project, established in 1995, has been to provide immediate access to specialist support and to use technology to improve the process of film interpretation. Grand Manan is an island community with a small, local 14-bed hospital served by one general practitioner. Basic diagnostic services are provided in radiology, with one X-ray unit. It used to take anywhere from seven to 10 days to transport films to the Saint John Regional Hospital for interpretation, 150 km away.

Using a PC-based software/hardware package by TecKnowledge, Inc., consisting of a film digitizer and sending station on Grand Manan Island, along with a 2k x 2k monitor and review station at the Saint John Regional Hospital, the time it normally took to receive a diagnostic report in Grand Manan was reduced from 10 days to 24 hours. In addition, this project supports clinician consultation which has enabled the physician on Grand Manan to seek specialist consultation, improving his ability to treat more difficult cases locally, and to make more educated use of the resources required in patient transportation.

This pilot project cost \$75,000, which was secured through hospital corporation funding. This project has more than met the goals and objectives established for it, and continues to be the operational method for radiology services to Grand Manan today.

TITLE:

***ATLANTIC HEALTH SCIENCES CORPORATION
IMAGING NETWORK
Project #2 – Region-Wide Imaging Network***

Goal:

Implement an imaging network to interconnect all six imaging

departments within the Corporation.

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Lead Technology Agency:

Sterling Diagnostic Imaging Canada, Inc.

Lead Health Agency:

Atlantic Health Sciences Corporation

Geographic/Regional Area Covered:

Provincial

Type of Initiative:

Provincial Telemedicine Network

Applications:

- After-hours radiologist consultation and remote physician viewing, via home teleradiology
- Electronic archiving of images accessible on line, with appropriate access approval
- Platform for soft copy radiologist interpretation
- Query and retrieving image capabilities
- Remote access

Timeline of Project:

Installation began in April 1997, with scheduled completion in September 1997.

Funding:

Anticipated total value: \$10 million in hardware, software and consumable products.

Status:

On commercialization, DRTM technology will be installed to provide digital acquisition of conventional radiology. This technology will support the migration to a 100% digital imaging service.

Partner:

Sterling Diagnostic Imaging Canada, Inc.

Key Issues: It is expected that operational costs for imaging services will be minimized, including a drastic reduction in the use of film, therefore decreasing operational costs.

Description: After the success of the Grand Manan project, the Atlantic Health Sciences Corporation began a new initiative, the Region-Wide Imaging Network, to implement an imaging network which will interconnect all six imaging departments within the Corporation, with the ultimate intention of commercialization.

Through this network, each site will be able to query and retrieve images from any location on the network. Remote access will be possible as well, thereby supporting home teleradiology for after-hours radiologist consultation and remote physician viewing. The network will serve as a platform for the implementation of soft copy radiologist interpretation, thereby significantly reducing the need to print images to film. Images will be archived electronically, and accessible on line to anyone with the appropriate access approval. This technology comes from Sterling Diagnostic Imaging Canada, Inc.

Installation of the network began in April 1997, with scheduled completion in September 1997. The anticipated total value is \$10 million, including hardware, software and consumable products. On commercialization, DR™ technology will be installed to provide digital acquisition of conventional radiology. This technology will support the migration to a 100% digital imaging service. It is expected that operational costs for imaging services will be minimized, including a drastic reduction in the use of film, therefore decreasing operational costs.

TITLE: *TÉLÉ-CARE/TÉLÉ-SOINS*

Goal: Provide telephone triage service and poison control for symptom-related health problems.

Contact Name and Information:	Jean Castonguay Executive Director, Hospital Services Department of Health and Community Services Tel: (506) 453-2283
Lead Technology Agencies:	Clinidata Micromedex National Health Enhancement Systems
Lead Health Agency:	Department of Health and Community Services
Geographic/Regional Area Covered:	Provincial (call centre is located in Moncton, New Brunswick)
Type of Initiative:	Clinical
Applications:	<ul style="list-style-type: none">• Call centre technology, Centramax M+• Demand management software by National Health Enhancement Systems• Poison control software, Poisindex by Micromedex
Timeline of Project:	Began in January 1995 in Health Region 1; expanded in January 1997 to all seven health regions in the province for a two-year pilot project.
Funding:	\$1.3 million per year for two years from the Department of Health and Community Services.
Status:	180,000 calls are expected per year.
Partners:	None
Key Issues:	N/A
Description:	Télé-Care is a telephone triage service and poison control centre for symptom-related health problems that don't necessarily require hospital visits. Nurses answer the calls for both the triage and poison control.

Clinidata is the lead technology agency involved. The call centre technology is called Centramax M+ Demand Management Software, provided by National Health Enhancement Systems. The poison control software, provided by Micromedex, is called Poisindex.

QUEBEC

TITLE:	<i>INFOROUTE SANTÉ</i>
Goal:	Use information technology to provide access to patient information and link a variety of stakeholders.
Contact Name and Information:	Claude Isabel Jeffery Hale Pavilion 1270 Sainte-Foy Road, 4th Floor Québec, Quebec G1S 2M4 Tel: (418) 527-5211, ext. 232 Fax: (418) 527-2773 E-mail: smoot@rsss.gouv.qc.ca Internet: http://www.msss.gouv.qc.ca/fr/orientat/autorout/projets/index.htm
Lead Technology Agency:	SMOOT (Le groupe de Soutien à la Mise en Oeuvre des Orientations Technologiques) is responsible for defining the technological guidelines of the Health and Social Services Network.
Lead Health Agency:	Ministère de la Santé et des Services sociaux
Geographic/Regional Area Covered:	Provincial
Types of Initiatives:	Consumer health Provincial health information network Tele-health
Applications:	<ul style="list-style-type: none"> • Electronic health records • Health and social services network • Telemedicine, telediagnosis, teleservice
Timeline of Project:	1994 to 1998.
Funding:	N/A
Status:	The action plan was developed in late 1996. Most projects

are currently under way and should be completed by the end of 1997. Others are scheduled for completion in 1998.

Partners:

N/A

Key Issues:

Access
Communication plan
Ethics in distance services
Security
Training

Description:

The goal of Inforoute Santé is to use information technology to provide access to an organized set of patient information and link a variety of stakeholders such as consumers, providers, pharmacies, laboratories, hospitals, government and financial institutions to improve the health and well-being of the population, the quality of services to users, and the efficiency and utilization of health and social services, and to control the costs of health programs and social services. A better capacity to exchange information among the players in the health and social services sector, including the public, will be necessary to achieve these goals and objectives.

SMOOT is responsible for defining the technological guidelines of the provincial health and social services network. It has already defined both the global architecture for the necessary information technologies and the support required to implement the technological guidelines. A major initiative is the interactions personnes-systèmes (IPS) project, whose mandate is to standardize access in the client-server environment.

Inforoute Santé's major initiatives include a provincial health information network, consumer health and telehealth.

There are several basic themes covered in Inforoute Quebec's action plan including an Information Highway to serve the public, the health and social service sector, and research, and the promotion of Quebec health and social services, universal access for the public, access for workers in the health and

social services sector, and security of the Information Highway.

Inforoute Santé began in 1994 and is expected to be complete in 1998, at a cost of \$50 million. There are 19 partners involved, from regional health boards to health councils and associations. The action plan was developed in late 1996, after receiving input from many organizations, as well as members of the public in preparing the strategy for Quebec's health and social services' information highway. The action plan relies on many innovative pilot projects currently under way in the province, and results will guide implementation of a health and social services network on a larger scale. Most projects are currently under way and should be completed by the end of 1997. Others are scheduled for completion in 1998.

ONTARIO

TITLE:	<i>SMART SYSTEM</i>
Goals:	Support and improve the quality of health care delivery, planning and administration via a telecommunication network.
Contact Name and Information:	Robert B. Cavanagh Director, Systems Support Branch 49 Place d'Armes Ontario Ministry of Health Kingston, Ontario K7L 5J3 Tel: (613) 548-6486 Fax: (613) 548-6693 E-mail: cavanaro@gov.on.ca
Lead Technology Agency:	Chartwell IRM Inc.
Lead Health Agency:	Ontario Ministry of Health
Geographic/Regional Area Covered:	Provincial
Type of Initiative:	Provincial health information network
Applications:	<ul style="list-style-type: none">• Client services• Common business services• Computerize physician's office practice• Drug health network• Electronic health record• Health sector intranet• Health system management information• Laboratory information systems• Master patient index• Patient care systems• Planning• Registration• Telemedicine

Timeline of Project:	Vision developed summer 1995 Stage 1, modeling and architecture, June-August 1997 Stage 2, analysis and design of components, September-December 1997 Stage 3, consolidation, January-March 1998.
Funding:	N/A
Status:	Negotiating Stage 1, the Program Management Office (PMO) starting July 14, 1997. A memorandum of understanding between the Ministry of Health, the Ontario Health Providers Alliance (OHPA) and each hospital to be linked is in the process of being signed.
Partners:	<ul style="list-style-type: none">▶ Information Technology Association of Canada (Ontario)▶ Ontario Health Providers Alliance
Key Issue:	Structural model - Smart System is not a project office; rather, it is operating on a business creation model.
Description:	<p>The goal of the Ontario Smart System is to support and improve the quality of health care delivery, health care planning and health care administration by integrating computers and information databases via a telecommunications network. Ultimately, the Smart System will provide access to an organized set of patient information and link a variety of stakeholders such as consumers, providers, pharmacies, laboratories, hospitals, government, other payers and financial institutions. The PMO will coordinate the implementation of the Smart System vision. Functions will include planning, developing a governance structure, standards, privacy and security.</p> <p>Smart System is different from other initiatives in that it is creating a marketplace and a business rather than running specific projects. Although the address is not yet available, a web site is being set up for the PMO where work in progress will be posted.</p>

TITLE:	<i>HOSPITAL FOR SICK CHILDREN TELEHEALTH PROGRAM</i>
Goals	Provide health-related consultations and treatment, patient health education and continuing education to health care professionals outside Toronto.
Contact Name and Information:	Angela Pavan–Nickoloff, RN TeleHealth Clinic Co-ordinator The Hospital for Sick Children TeleHealth Program 555 University Avenue Toronto, Ontario M5G 1X8 Tel: (416) 813-7973 Fax: (416) 813-5328 E-mail: angela.pavan@mailhub.sickkids.on.ca
Lead Technology Agencies:	Adcom Electronics Ltd Bell Canada Teleglobe Canada
Lead Health Agencies:	Ezra Lemarpeh Center, Israel Health Sciences North, Thunder Bay The Hospital for Sick Children, Toronto Soldier’s Memorial Hospital, Orillia Thunder Bay Regional Hospital, Thunder Bay Zone Hospital, Sioux Lookout
Geographic/Regional Area Covered:	Northern Ontario
Type of Initiative:	Telemedicine
Applications:	<ul style="list-style-type: none"> • ISDN telephone lines • Monitors at each site to project high-resolution images (digitized X-rays, cardiograms, ultrasounds) • Two-way video link • Videoconferencing equipment with medical peripherals
Timeline of Project:	Pilot project, February 1996 to February 1997.

Funding:	\$317,800 for the pilot project (primarily within the Hospital for Sick Children)
Status:	Five components have been identified for growth and expansion: Health education and training (in progress) Health information Inter-institutional information transfer Medicine at a distance (in progress) Telemonitoring, triage and telecare
Partners:	<ul style="list-style-type: none">▶ Ezra Lemarpeh Center, Israel▶ Health Sciences North, Thunder Bay▶ Soldier's Memorial Hospital, Orillia▶ Zone Hospital, Sioux Lookout
Key Issues:	Funding Lack of quality evaluative studies Licensing/malpractice Reimbursement Total community participation
Description:	<p>The goal of the Hospital for Sick Children TeleHealth Program is to provide health- related consultations and treatment, patient health education and continuing health care education to places that are at a distance from Toronto. A formal evaluation of this new method of health care technology is in progress under the direction of the Telehealth Evaluation Team.</p> <p>Via remote consultation and treatment, health education and training, a two-way video link allows specialists in Toronto, aided by a telehealth nurse in Thunder Bay, to see a patient, direct a physical exam and make a diagnosis or follow-up assessment. Each site is equipped with a second monitor to project high-resolution images such as digitized X-rays, cardiograms or ultrasounds. It uses videoconferencing equipment with medical peripherals and leased ISDN telephone lines that have twice the capacity of normal phone lines.</p>

MANITOBA

TITLE:	MANITOBA HEALTH INFORMATION NETWORK (HIN)
Goal:	Develop a network for the secure and confidential exchange of information among authorized health professionals.
Contact Name and Information:	Christopher R. O'Neill Acting Senior Project Manager Manitoba Health Information Network P.O. Box 925 599 Empress Street Winnipeg, Manitoba R3C 2T6 Tel: (204) 786-7117 Fax: (204) 775-0268 E-mail: coneill@health.gov.mb.ca
Lead Technology Agencies:	N/A
Lead Health Agency:	Ministry of Health, Health Information Services of Manitoba Steering Committee (HISM)
Geographic/Regional Area Covered:	Provincial
Type of Initiative:	Provincial health information network (HIN)
Applications:	<ul style="list-style-type: none">• Community health services• Diagnostic services• Hospital and personal care homes services• Individual services• Pharmacy information system• Physicians and primary care providers services
Timeline of Project:	Announced in 1992 Assessed in 1994

Development began in December 1995, to be completed in five years.

Funding:

\$100 million maximum budget

Status:

Projects currently under way:

- Communications development
- Community health
- Diagnostic services information system
- Expansion of Drug Program Information Network
- General facilitation
- Physicians and primary care providers
- Technology infrastructure

Partners:

HISM formed as a financial and administrative vehicle to facilitate development of the health information network. Seven major committees or groups belonging to the HISM, represent government, public and private health industry, academia and private sector interests, totaling 83 seats.

SmartHealth Incorporated is a partnership between EDS Canada Inc. and the Royal Bank Group of Canada.

Key Issue:

There is a strong focus on stakeholder participation throughout development to support the efficient and effective identification and capture of benefits.

Description:

The Manitoba Health Information Network is an initiative to develop a network which will exchange information in a secure and confidential manner among authorized health professionals in order to improve the health and well-being of all Manitobans. The vision of the HIN is to facilitate the evolution of the health system in Manitoba to improve health care to Manitobans, to encourage the development and use of outcome measurements as a determinant of health policy, to increase the focus on prevention and community-based services, and to monitor services for effectiveness and efficiency appropriately.

The Health Information Services of Manitoba Steering Committee is a corporation formed as a financial and administrative vehicle to facilitate development of the HIN. The sole shareholder is the Minister of Finance of Manitoba. The Department of Health acts as the main health agency.

SmartHealth undertakes the work of designing and implementing the HIN under the direction of the Ministry, and the Royal Bank provides financing to enable the matching of project development costs to financial benefits once the HIN is operational. *SmartHealth*'s benefits-focused approach concentrates on participation of the stakeholder community throughout design and development. The first technical deployment is scheduled to begin in November 1997.

TITLE:	<i>DRUG PROGRAMS INFORMATION NETWORK (DPIN)</i>
Goals:	Link all retail pharmacies in Manitoba for health safety and Pharmacare accounting purposes.
Contact Name and Information:	Ken Brown Pharmaceutical Consultant Manitoba Health P.O. Box 925, Room 128 599 Empress Street Winnipeg, Manitoba R3C 2T6 Tel: (204) 786-7233 Fax: (204) 786-6634 E-mail: kenbrown@mb.sympatico.ca
Lead Technology Agencies:	N/A
Lead Health Agency:	Ministry of Health
Geographic/Regional Area Covered:	Provincial

Type of Initiative:	Pharmaceutical information network
Applications:	<ul style="list-style-type: none">• Client claim processing• Drug history/warning notification• Provides instant rebates where appropriate
Timeline of Project:	July 1994, all pharmacies linked for Pharmacare August 1995, expanded to accept drug claims for Family Service clients as well as claims for Manitoba Health's Personal Care Home Program.
Funding:	\$3.8 million (est.)
Status:	The DPIN is going well and is constantly being improved.
Partners:	N/A
Key Issue:	Security of information
Description:	Since implementation in 1994, the Drug Programs Information Network has linked all retail pharmacies in the province, providing pharmacists with client prescription records for health safety and Pharmacare accounting purposes, instantly. The DPIN is the first of its kind in Canada. The latest security features have been installed to protect privacy and confidentiality of all patient information.
TITLE:	<i>TELEMEDICINE RESEARCH AND DEVELOPMENT PILOT PROJECT</i>
Goal:	Research and develop practices and systems of health and education service delivery using advanced telecommunications for remote communities.
Contact Name and Information:	Bill Karle Telemedicine Research and Development Pilot Project 97 Dafoe Road

Winnipeg, Manitoba R3T 2N2
Tel: (204) 474-6600
Fax: (204) 269-6629
E-mail: karle@mail.cc.umanitoba.ca

**Lead Technology
Agencies:**

Cifra Medical, Inc.
MTS/Stentor
Newbridge
Telesat

Lead Health Agency:

University of Manitoba, Health Sciences Centre (Winnipeg)

**Geographic/Regional
Area Covered:**

Provincial (communities of Norway House, Churchill and Thompson)

Types of Initiatives:

Research and development
Telemedicine

Applications:

- Clinical nursing support
- Computer teleconferencing
- Dental personnel support
- Development of distance triage medical delivery care
- Educational services
- Internet access
- Matched consulting physician–patient follow-up
- Quality evaluation with the intent of developing future models
- Radiographic technology and diagnostic ultrasound
- Remote health service delivery
- Telecommunications research and development
- Videoconferencing

Timeline of Project:

January 1997 to January 1998.

Funding:

N/A

Status:

N/A

Partners:

- ▶ Churchill Regional Health Care Centre
- ▶ Cifra Medical Inc.

- ▶ Communications Research Centre
- ▶ Community of Norway House
- ▶ The Health Sciences Centre
- ▶ Manitoba Telephone System
- ▶ MRNet
- ▶ Newbridge Networks Corp.
- ▶ Telesat Canada
- ▶ Thompson General Hospital
- ▶ The University of Manitoba

Key Issues:

N/A

Description:

The goal of the Telemedicine Research and Development Pilot Project is to research and develop practices and systems of health and education service delivery using advanced telecommunications between remote communities in Manitoba's North and Winnipeg. As well, telecommunications industry manufacturers and service providers will develop marketable products and services.

This project targets three Northern Manitoba communities: Norway House, Churchill and Thompson. There are three main concentrations involved in the pilot: remote health service delivery, educational services and telecommunications research and development.

Cifra Medical, Inc., Newbridge, MTS/Stentor and Telesat provide the application technology, including videoconferencing, computer teleconferencing, Internet access, ATM, an orbital satellite link and a terrestrial fibre optic link. Essentially, this is a project focusing on quality evaluation with the intent of developing future models.

TITLE:***SMARTHEALTH***

Goal:	Permit all Manitoba care providers to access an Intranet network that follows the HL7 standard.
Contact Name and Information:	John Williams President and Chief Executive Officer 300 - 330 St. Mary Avenue Winnipeg, Manitoba R3C 3Z5 Tel: (204) 987-5841 Fax: (204) 944-8413 E-mail: williams@smarthealth.ca
Lead Technology Agencies:	Electronic Data Systems Inc. Information Magnetic Technology
Lead Health Agency:	Ministry of Health
Geographic/Regional Area Covered:	Provincial
Type of Initiative:	N/A
Applications:	<ul style="list-style-type: none">• The SmartHealth initiative has five overall components:• Community health• Doctors• Hospitals• Laboratories• Pharmacies
Timeline of Project:	From February 1996 to the year 2001.
Funding:	Contract of \$100 million
Status:	At this stage efforts are concentrating on analysis, in consultation with the users, the government and the public. Advantages of the current system are being retained and work is progressing in a manner which causes the least amount of disruption to the existing structure while responding to the needs of individuals and groups. The first technical deployment takes place in October 1997.

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- Partner:** The Royal Bank has a 49% share in *SmartHealth*.
- Key Issue:** Particular emphasis in the consultations and in the case-by-case analysis and evaluations, at each stage of the contract, to guarantee the best possible returns with regards to cost and efficiency.
- Description:** *SmartHealth* is using a Unix environment to establish an Intranet for all care providers in Manitoba. The central site is in Winnipeg, with service to the seven health regions in the province.
- The emphasis is on interaction among the various components and the sharing of information. *SmartHealth* will establish the necessary systems for this exchange through the appropriate network technology, the relational database and the Internet interface.

SASKATCHEWAN

TITLE:	SASKATCHEWAN HEALTH INFORMATION NETWORK (SHIN)
Goal:	Develop an information management system built on the province's existing fibre optic network.
Contact Name and Information:	Neil Gardner Executive Director Corporate Information and Technology Branch Saskatchewan Health 3475 Albert Street, 2nd Floor, East Wing Regina, Saskatchewan S4S 6X6 Tel: (306) 787-3043 Fax: (306) 787-7589 E-mail: ngardner@health.gov.sk.ca
Lead Technology Agency:	Science Applications International Corporation (SAIC)
Lead Health Agency:	Saskatchewan Health
Geographic/Regional Area Covered:	Provincial
Type of Initiative:	Provincial health information network
Applications:	Service event management system (records to all health service events), linkage to personal registry system
Timeline of Project:	To begin on approval.
Funding:	N/A

Status: Planning for SHIN is in its final stages. It is anticipated that a decision regarding its implementation will be made in the fall of 1997.

Partners:

- ▶ Saskatchewan Association of Health Organizations (SAHO)
- ▶ Science Applications International Corporation (SAIC)

Key Issues: N/A

Description: SHIN is envisioned to be an information management system built on the Province of Saskatchewan's existing fibre optic network. It would electronically link all district-employed health care providers and over 400 district health facilities (district offices, hospitals, community health centres, long term care facilities). The network would facilitate the creation and sharing of a comprehensive electronic health record for each person in the province, protected by security mechanisms and strictly controlled for confidentiality. SHIN would give health care providers access to complete, accurate and vital information leading to better decisions and more effective overall health care. SHIN would also support long distance delivery of health services by providing the infrastructure necessary for telehealth applications such as videoconferencing and electronic transmission of X-ray and ultrasound images. Applications planned include a service event management system (records to all health service events) and linkage to a personal registry system.

If approved, the project would begin immediately. Planning for SHIN began shortly after health reform was initiated in the summer of 1992. A comprehensive health systems information technology architecture or "blueprint" was completed in April 1995. A business case on SHIN was initiated and completed in March 1997. Planning for SHIN is now in its final stages. It is anticipated that a decision regarding its implementation will be made the fall of 1997.

TITLE: *TELEHEALTH PILOT PROJECTS*

Goal:	Test, via three projects, the extent to which "telehealth" linkages can improve the services of a variety of health care providers.
Contact Name and Information:	Lauren Donnelly Saskatchewan Department of Health Tel: (306) 787-3219 E-mail: ldonnell@health.gov.sk.ca
Lead Technology Agencies:	N/A
Lead Health Agency:	Saskatchewan Department of Health To be announced September 1997.
Geographic/Regional Area Covered:	
Types of Initiatives:	Diagnostics and training initiative Public and health provider information initiative through the world wide web Remote consultation Rural physician support initiative
Applications:	N/A
Timeline of Project:	N/A
Funding:	N/A
Status:	To be announced September 1997.
Partners:	N/A
Key Issues:	N/A
Description:	The Telemedicine Steering Committee made up of representatives of the College of Physicians and Surgeons,

Saskatchewan Medical Association, College of Medicine, Saskatchewan Registered Nurses' Association, Regina Health District, Saskatoon District Health, Saskatchewan Association of Health Organizations, Saskatchewan Intergovernmental Affairs and Saskatchewan Health has selected three pilot projects from proposals submitted by district health boards. The three projects include remote consultation, a diagnostics and training initiative, a rural physician support initiative, and a public and health provider information initiative through the world wide web.

The primary objective of telemedicine is to test the extent to which telehealth linkages can improve access and ease of access to the services of a variety of health care providers for Saskatchewan residents (especially for residents of rural and remote areas). Additional objectives are to test the potential of telemedicine to provide rural practice support — enhance family physicians' and other health providers' access to colleagues and specialists; encourage optimal use of specialist personnel and resources in the province; and provide continuing education and skill upgrading for health care providers, and health information and education to patients and the public.

Decisions regarding such things as geographic areas involved and status will be announced in September 1997.

TITLE:

PROVINCIAL IMMUNIZATION RECORD SYSTEM

Goal:

Connect all 30 districts and many of the First Nations health delivery agencies through a secure provincial immunization database.

Contact Name and Information:

Neil Gardner
Executive Director
Information and Technology Branch

Saskatchewan Health
 3475 Albert Street, 2nd Floor, East Wing
 Regina, Saskatchewan S4S 6X6
 Tel: (306) 787-3043
 Fax: (306) 789-7589
 E-mail: ngardner@health.gov.sk.ca

Lead Technology Agency:	Sympatico (not formally announced)
Lead Health Agency:	Saskatchewan Department of Health
Geographic/Regional Area Covered:	Provincial
Type of Initiative:	Clinical
Applications:	<ul style="list-style-type: none"> • Authenticated sessions • Data encryption • Internet network
Timeline of Project:	Pilot phase, summer 1997 Province-wide implementation, fall 1997.
Funding:	N/A
Status:	The system is being pilot tested with three health agencies and will be evaluated based on field experience before provincial implementation.
Partners:	N/A
Key Issues:	Internet security, response times and application design to minimize data entry time will all be closely monitored during the pilot phase.
Description:	The goal of the Provincial Immunization Record System is to connect all 30 districts and many of the First Nations health

delivery agencies through a secure connection via the Internet to a provincial immunization database. The database will keep track of the immunization status of children and enable public health nurses to monitor the immunization status more effectively.

Design of this system has been carried out by the Department of Health in close co-operation with representatives of the agencies involved.

The Internet is being used as the network for this application, with a number of security measures, such as data encryption and authentication, being put in place to secure the data and ensure that confidentiality is maintained. The flexibility the Internet offers in enabling nurses in remote communities to access and use the new system is a major advantage over traditional system approaches

The pilot phase is planned to begin in the next few months. The system is currently being pilot tested with three health agencies and will be evaluated based on field experience before provincial implementation. Province-wide implementation is expected to take place in the fall of 1997. Internet security, response times and application design to minimize data entry time will all be closely monitored during the pilot phase.

TITLE:

NEWBORN REGISTRATION SYSTEM

Goal:

Allow rapid assignment of a permanent identifier to each newborn.

Contact Name and Information:

Neil Gardner
Information Technology Branch
Saskatchewan Department of Health
3475 Albert Street, 2nd Floor, East Wing

Regina, Saskatchewan S4S 6X6
Tel: (306) 787-3043
Fax: (306) 789-7589
E-mail: ngardner@health.gov.sk.ca

Lead Technology Agencies:

N/A

Lead Health Agency:

Saskatchewan Department of Health

Geographic/Regional Area Covered:

Provincial

Type of Initiative:

Clinical

Applications:

N/A

Timeline of Project:

N/A

Funding:

N/A

Status:

A working group has recently been formed to develop this new approach to registering newborns. A design stage has not been reached yet, but it is likely that the Internet will be one of the technologies of choice, depending on the requirements developed for the system.

Partners:

N/A

Key Issues:

N/A

Description:

Using technology similar to the Immunization Records System, the Newborn Registration System's goal is to allow rapid assignment of a permanent identifier to the newborn. This will be used to notify departments such as Vital Statistics, Health Registration and Public Health at a more efficient rate. It will also ensure that no newborns are missed in the provincial phenylketonuria (PKU) screening program.

ALBERTA

TITLE:	<i>ALBERTA WELLNET</i>
Goal:	Enable better decisions, using integrated system-wide health information.
Contact Name and Information:	John McAllister Director, Alberta <i>Wellnet</i> Alberta Department of Health Tel: (403) 427-7139 Fax: (403) 422-5176 E-mail: mcallj@mail.health.gov.ab.ca
Lead Technology Agencies:	N/A
Lead Health Agency:	Alberta Department of Health
Geographic/Regional Area Covered:	Provincial
Type of Initiative:	Provincial health information network
Applications:	N/A
Timeline of Project:	In "blueprint" stage.
Funding:	Of the \$200 million to \$300 million allotted for the information management and technology budget, a significant percentage is expected for this project.
Status:	Strategic alliance partner (IBM, Canada) was officially announced on July 14, 1997.

- Partners:**
- ▶ Alberta Research Council
 - ▶ CGI Information Systems and Management Consultants, Inc.
 - ▶ Ernst and Young
 - ▶ IBM, Canada
 - ▶ Sierra Systems Consultants, Inc.
 - ▶ TELUS

Key Issues: N/A

Description: The Alberta *Wellnet* is a provincial health information management/information technology initiative. The goal is to enable better decisions, using integrated system-wide health information, to improve the health of Albertans and the management of the health system.

The initiative will spend its first months developing an overall architecture and project plan (“blueprint”), including a timeline for implementing projects. Over the next five years, current budgets in the Alberta health system include \$200 million to \$300 million for information management and technology. This amounts to approximately 1.5% of the annual spending on health. The project director expects a good portion of that will be allotted to this new initiative.

IBM, Canada leads TELUS and three Alberta-based information management and technology firms specializing in health sector systems integration: CGI Information Systems and Management Consultants, Inc., Sierra Systems Consultants, Inc. and EDM Management Systems, Inc. Ernst and Young is the quality assurance partner, while the Alberta Research Council is providing technology expertise.

TITLE: *REMOTE CONSULTATIVE NETWORK PROJECT*

Goal:	Allow interactive consultation services between rural health care providers and specialists in urban centres.
Contact Name and Information:	Andy Burgess TELUS Communications, Inc. 10020-100 Street, 6th Floor Edmonton, Alberta T5J 0N5 Tel: (403) 493-3542 Fax: (403) 493-3115 E-mail: Andy.Burgess@telus.com
Lead Technology Agency:	TELUS
Lead Health Agency:	Alberta Department of Health
Geographic/Regional Area Covered:	Provincial (there are currently 13 telehealth sites in Alberta)
Type of Initiative:	Telemedicine
Applications:	<ul style="list-style-type: none">• Cardiology• Dermatology• Ear, nose and throat• Emergency medicine• Medical training and education• Ophthalmology• Radiology• Surgical applications• Telepsychiatry
Timeline of Project:	Began in 1994.
Funding:	\$105,000 to \$120,000 per site
Status:	N/A
Partner:	Federal government, via Medical Services Branch

Key Issues:	N/A
Description:	<p>The Remote Consultative Network Project allows interactive consultation services between rural health care providers and specialists in urban centres. The network enables physicians, nurses and residents to use audio, video, imaging and data transmission services to respond to queries. Real-time transmission of ultrasounds, X-rays and other test results facilitates diagnosis by specialists in larger urban facilities and reduces time for diagnosis and treatments.</p> <p>TELUS is the lead technology agency involved and is guided by the Alberta Department of Health.</p>
TITLE:	<i>HEALTH KNOWLEDGE NETWORK (HKN)</i>
Goal:	Create access to databases of the world's medical and health sciences literature.
Contact Name and Information:	<p>Della Jacobson Health Knowledge Network Marketing Office, Ring House #1 University of Alberta Edmonton, Alberta T6G 2E2 Tel: (403) 492-8348 Fax: (403) 492-6185 E-mail: della.jacobson@ualberta.ca</p>
Lead Technology Agency:	Ovid Technologies
Lead Health Agencies:	<p>University of Alberta University of Calgary</p>
Geographic/Regional Area Covered:	Alberta, Yukon and Northwest Territories
Type of Initiative:	Research

Applications:	<ul style="list-style-type: none">• Access to published information when and where it is needed• Document delivery• Search assistance by expert medical librarians• Sophisticated, user-friendly search interface• Training services
Timeline of Project:	Established in 1993.
Funding:	Through annual subscriptions
Status:	The David Thompson Health Region began providing access to the HKN last March.
Partners:	<ul style="list-style-type: none">▶ Alberta Heritage Foundation for Medical Research▶ College of Physicians and Surgeons of Alberta
Key Issues:	N/A
Description:	<p>The Health Knowledge Network creates access to databases of the world's medical and health sciences literature. In support of the programs offered to students by faculty, the libraries at the University of Alberta and the University of Calgary collaborated to provide remote access to information in the teaching hospitals. The HKN supports remote access by providing training services, expert search assistance and document delivery. By enhancing the use of timely authoritative information sources, the HKN encourages informed medical decision making and provides opportunities for health care professionals to continue their education after their degrees and into the future.</p> <p>This complete information service includes an advanced, user-friendly search interface; timely, authoritative sources; expert search assistance; training services customized according to needs; and document delivery that takes maximum advantage of investments in local collections.</p>

Established in 1993, the HKN's servers run software developed by Ovid Technologies. This service is sustained by extending access throughout Alberta, Yukon and the Northwest Territories and reinvesting in campus resources. Annual subscriptions are available to individual health care professionals and institutions. Current customers include the Alberta Cancer Board, Workers' Compensation Board, Alberta Children's Hospital, Foothills Hospital and Lethbridge Community College. This past March, the David Thompson Health Region (serving Red Deer, Penoka, Olds and surrounding area) has become the first regional health authority in Alberta to provide region-wide access to the HKN.

BRITISH COLUMBIA

TITLE:

HEALTHNET/BC

Goal:	Develop an open information-sharing network that allows multiple stakeholders to provide a wide variety of services to support health-related business needs.
Contact Name and Information:	Colin Stafford HealthNet/BC Data Management Branch, Systems Division 1520 Blanshard Street Victoria, British Columbia V8W 3C8 Tel: (250) 952-2406 Fax: (250) 952-1202 E-mail: cstaffor@bcsc02.gov.bc.ca
Lead Technology Agencies:	DEC IBM Oracle Sun
Lead Health Agencies:	British Columbia Ministry of Health Community health councils Regional health boards
Geographic/Regional Area Covered:	Provincial
Type of Initiative:	Provincial health information network
Applications:	<ul style="list-style-type: none">• Client registry• Communications services• Product and services catalogue
Timeline of Project:	Began in 1993.
Funding:	N/A
Status:	<ul style="list-style-type: none">- Projects in progress:- Continuing care system- E-mail directory service (two phases)- Hospital system and Ministry of Health's- Individual e-mail services

- Integration pilot
- Integration with hospital systems (client registry functions)
- LAN e-mail gateway service
- New security/privacy committee
- Roll out of PharmaNet to hospital pharmacies
- Technical design with BC Transplant Society
- Technical infrastructure changes on PharmaNet computers
- Web site of specifications/products and services

Partners: N/A

Key Issues: N/A

Description HealthNet/BC is an open information-sharing network that allows multiple stakeholders to provide a wide variety of health services, Internet, e-mail and terminal services, and dedicated application services to support health-related business needs. It promotes and enables effective information management in the health sector, by enabling and facilitating the transfer and sharing of information, on a secure, authorized basis (that can be audited), among health service providers, managers, governors, researchers and the general public.

This network's initiatives fall into three main categories: communications services, a client registry and a product and services catalogue. There are many projects in progress at the moment. Communications services applications include an e-mail directory service (two phases), individual e-mail services and a LAN e-mail gateway service. Regarding client registry development, an integration pilot of the hospital systems and the Ministry of Health's continuing care system is under way, as well as integration with hospital systems' client registry functions. Also, a new security/privacy committee has been formed. Other applications in this category include a roll out of PharmaNet to hospital pharmacies, technical design work with the BC Transplant Society and technical infrastructure changes on PharmaNet computers. In reference to the third

category, a web site of specifications/products and services is being designed.

TITLE: *BC HEALTH INFORMATION STANDARDS COUNCIL*

Goal: Advise the Ministry of Health on health information standards that should be adopted in the province.

Contact Name and Information: Jim Coward
Co-ordinator
British Columbia Health Information Standards Council
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Victoria, British Columbia V8W 3C8
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E-mail: jhcoward@bcsc02.gov.bc.ca
Internet: <http://www.hlth.gov.bc.ca/him/bc/sc/genindex.html>

Lead Technology Agencies: N/A

Lead Health Agency: British Columbia Ministry of Health

Geographic/Regional Area Covered: Provincial

Type of Initiative: Policy

Applications: N/A

Timeline of Project: Established October 1995

Funding: N/A

Status: Approved a number of health information standards.

Partners: The Standards Council maintains direct links with the

Canadian Institute for Health Information (CIHI) by direct liaison and the participation of Council Members on CIHI's national board.

Key Issues:

N/A

Description:

The British Columbia Health Information Standards Council is composed of an informed, experienced group of health representatives who advise the Ministry of Health on health information standards that should be adopted in the province. The role of the Council focuses on the identification of standards and guidelines, which promote effective and efficient health information sharing. The Standards Council has met regularly since its inception, in October 1995. It has established a regular format, site and process for its meetings, developed and approved its terms of reference, and established a review process for standards. The Council has also developed a set of key operating principles, along with a philosophical framework or model for this review.

The following standards and guidelines have been approved by the B.C. Ministry of Health on the advice of the Health Information Standards Council, as health information standards to be implemented across the British Columbia health system:

- PHN - Personal Health Number
- TCP/IP - Transmission Control Protocol/Internet Protocol,
- ICD-10 - International Statistical Classification of Diseases and Related Health Problems (Revision 10)
- Health Registry
- Standards for Management Information Systems in Canadian Health Facilities (commonly referred to as the MIS Guidelines)
- COACH's Security and Privacy Guidelines for Health Information Systems.

The Standards Council maintains direct links with the Canadian Institute for Health Information (CIHI) by direct

liaison and the participation of council members on CIHI's national board.

TITLE: ***INFORMATION MANAGEMENT GROUP (IMG)***

Goal: Responsible for the British Columbia Ministry of Health's information management strategies, policies, standards and technology initiatives through six divisions.

Contact Name and Information: Barry Gray
Director of Planning and Information Resources for IMG
British Columbia Ministry of Health
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Lead Technology Agencies: N/A

Lead Health Agency: British Columbia Ministry of Health

Geographic/Regional Area Covered: Provincial

Type of Initiative: Administration

Applications:

- Health Data Warehouse Project
- HealthNet/BC Project
- Health Registry Project
- Year 2000 Project

Timeline of Projects: N/A

Funding: N/A

Status: N/A

Partners: N/A

Key Issues:

N/A

Description:

The IMG is responsible for the British Columbia Ministry of Health's information management strategies, policies, standards and technology initiatives. The IMG's mission is to support the goals of the provincial health system by improving the quality and value of health information. The vision for health information management in British Columbia is "effectively and efficiently managed information that enables informed decision making to achieve the results desired in our health system."

The IMG consists of six divisions (Corporate Services, Healthcare Services, Regional Services, Planning and Information Resources, Technology Management and Vital Statistics) and four major projects (the Health Registry Project, HealthNet/BC Project, Health Data Warehouse Project and the Year 2000 Project).

NORTHWEST TERRITORIES

TITLE:	<i>DIGITAL COMMUNICATIONS NETWORK (DCN)</i>
Goal:	Link all levels of government in the Northwest Territories, focusing on computer information systems for health services, education and other government departments.
Contact Name and Information:	Ed Norwich Department of Health Northwest Territories Tel: (403) 873-7612 E-mail: ed_norwich@got.nt.ca
Lead Technology Agencies:	N/A
Lead Health Agency:	Northwest Territories Department of Health
Geographic/Regional Area Covered:	Northwest Territories
Type of Initiative:	Administrative
Applications:	Basic workplace applications including e-mail
Timeline of Project:	From 1997 to 1999.
Funding:	N/A
Status:	The first sites to receive hardware will be the regional communities, with installations scheduled over the next few months. Baffin and Inuvik regions are expected to be the first to bring all health and social service sites on line by the end of September 1997. The rest of the Northwest Territories will be scheduled as technical support becomes available.
Partners:	N/A
Key Issue:	Lack of local Internet access due to low availability and high

costs

Description:

The Digital Communications Network is a network linking all levels of government in the Northwest Territories, focusing on computer information systems in various communities for health services, education and other government departments.

The initial delivery plan for the DCN is to provide the hardware to all health centres and social services offices. At completion of the roll out in 1999, all communities in the Northwest Territories will have at least a 56 kbps data link. The basic workplace applications, including e-mail, will be provided.

At this time there are only six communities in the Northwest Territories that have local Internet access. People outside these six communities must dial up, at an exorbitant rate, to the nearest Internet service provider. With the introduction of the DCN there will be opportunities for establishing service providers in each community. This will certainly create opportunities for the Northwest Territories to participate in the vast array of information technologies being used throughout Canada to improve the delivery of health care. The Government of the Northwest Territories is committed to ensuring that the Internet is available to all NWT residents, but if there is no service provider, there will have to be a decision made about the government providing the service. No decision has been made at this time.

YUKON

<i>TITLE:</i>	<i>CORNERSTONE</i>
Goal:	Focus on intake and case management using generic models.
Contact Name and Information:	Chris Bookless Department of Health and Social Services Yukon Tel: (403) 667-3691 E-mail: chris.bookless@gov.yk.ca
Lead Technology Agency:	Docu.Max Enterprises
Lead Health Agency:	Department of Health and Social Services
Geographic/Regional Area Covered:	Yukon
Type of Initiative:	Clinical
Application:	Development of database standards
Timeline of Project:	Planning began in 1995; contract began March 1997, beta by end of 1997.
Funding:	\$690,000 from departmental capital budget
Status:	N/A
Partners:	None
Key Issues:	Availability of band width Examining a digital communications network
Description:	Cornerstone is a systems project focusing on intake and case

management using generic models in order to serve the Yukon Department of Health, with hopes of implementing it beyond the Department. Cornerstone's first target is home care and services to persons with disabilities.

DocuMax Enterprises holds the contract for Cornerstone. TCP/IP is being used for a client server-based network using 3270 emulation for mainframe access where required. Other basics used to facilitate the system include an NT server, Windows 95 software and Oracle (database standard). Enabling technologies including Filenet, Java and Jaguar are being considered, as well.

At the moment, the Department is in the process of fixing or replacing outdated computer systems, likely starting with the registration system. Band width is one of the main issues in the Yukon. The government is interested in the Northwest Territories' approach to solving this problem, via a digital communications network. However, the Yukon is not pursuing this idea at this time. Also, a preliminary feasibility study on telemedicine service options for the Yukon has been completed. No specific action plan has been designed to date.

FEDERAL ACTIVITIES

The National Forum on Health

The National Forum on Health's final report, *Canada Action Health: Building on the Legacy*, states that a key objective for the health sector should be

... to move rapidly toward the development of an evidence-based health system, in which decisions are made by health care providers, administrators, policy makers, patients and the public on the basis of appropriate, balanced and high quality evidence. In doing so, the potential role of information technology should be explored.

One of the subsequent recommendations, in light of this statement, is the establishment of a nation-wide health information system. The following key initiatives currently under way in Health Canada and Industry Canada point toward such a vision.

Health Canada:

In the federal budget announcement of February 1997, three components of a new Canadian health information system were announced, to begin building on such a vision:

- National Population Health Clearinghouse
- National Health Surveillance System
- First Nations Health Information System.

Health Canada is also involved in the G7 Global Healthcare Applications Project.

National Population Health Clearinghouse (NPHC)

A national network of health information

Vision:

“single window approach” that provides

- One-stop shopping for health information for Canada, excluding health advice and counselling
- National scope with regional content and international links

- Access possibilities: toll-free number, fax, e-mail, Internet (for gathering response and input info as well).

This is intended to be a network outside of Health Canada from a content perspective. HC will be responsible for setting up the infrastructure, but the content contributors will include all forms and levels of health-related government across the country, the private health sector, non-governmental organizations (NGOs) and academia.

Goals:

This single-window approach to accessing health information includes the following goals:

- timely, relevant, accessible information
- formal mechanisms (annual focus groups, scroll-downs on screen)
- informal mechanisms (ongoing, via e-mail, for example)
- access for consumers, health professionals, NGOs
- comprehensiveness of the network via partners who will uphold set out standards

The information will be tailored to appeal to each of the particular audiences it aims to reach. This will be achieved by using the best quality resources from all relevant partners.

Content:

Information will target the general public as well as health professionals, e.g., researchers, programmers and developers, rather than health care professionals.

The content will be packaged in a range of products, such as frequently asked questions and fact sheets for the public, using statistics and synthesized data to create reports and tools for educational or program purposes, and audio and video streaming. In essence, the information will constitute resources for intermediaries who in turn develop the information for consumer use.

Lead Technology and Health Agencies:

These are to be determined. Partners will include other federal departments, provinces and territories, NGOs and the private sector.

-
- Applications:**
- Fax
 - Internet
 - List services, discussion groups, etc.
 - Postal mail, print-on-demand services
 - Telephony call centre (hardware/software technology)
- Timeline and Funding:** Research for the NPHC concept began in 1995 and was approved in the federal budget release in February 1997. At this stage, three years of funding have been granted, with a renewal expected at the end of those three years. An amount of \$10 million was granted, to be distributed over the initial three years.
- Status:** A Treasury Board submission will be put forward in the fall of 1997. Planning, development and testing are under way
- Partners:** A broad range of partnerships will be made, from all levels of government, NGOs, the private sector and universities. The NPHC will complement the other two Canadian Health Information System components.
- Key Issues:**
- Accessibility and ease of use issues
 - Governance issues
 - Marketing
 - Partnership protocols
 - Privacy and confidentiality
 - Standards (content, service, systems)
- Contact:** Bettylynn Stoops
Manager, Partnerships and Marketing Division
Health Policy and Protection Branch
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- National Health Surveillance System (NHSS)* to develop a national infrastructure for public health intelligence
- Vision and Goals:** The National Health Surveillance System's main goal is to gather the elements of infrastructure that are necessary to

develop a national infrastructure for Canadian public health intelligence, which will be national in scope with an international component.

Lead Technology Agencies:

Collaboration with telecommunications and software development companies will be integral to developing appropriate infrastructure. Current technology agencies involved include TELUS, Tydac, Geometrics International and APG Inc.

The NHSS will be largely Internet-based, so there is also a need for the development of a modular piece of software that will link the NHSS with all health units. Desktop interfaces with GIS capabilities will also be designed in collaboration with software companies.

Lead Health Agencies:

Health Canada is the lead health agency in the building of the infrastructure for the NHSS. An integral feature of this system, however, is the local (versus federal) nature. By this, it is meant that the delivery of health care does not happen at the federal level. The data (content) are generated at the local level and managed at the federal level. Therefore, the NHSS focuses on three levels of health agencies: federal, provincial and local (public health unit/medical officer of health).

**Initiatives/
Applications:**

There are approximately 20 projects encompassed in the NHSS, categorized into two groups. Core projects (6) focus on true infrastructure development — no surveillance is involved. Rather, they enable surveillance, focusing on database management. Surveillance projects (14) are the active aspects of surveillance. They are electronic, survey-based, subject-oriented pilots, according to which of the six core projects they are linked to. They are geographically specific, as well.

For example, the Youth Risk Factor pilot, being conducted in New Brunswick, is related to the core project called Local Public Health Infrastructure Development (LoPHID). The data are collected in the area of the pilot, and such things as

standards and security issues regarding the process of that collection are discussed at a national level.

Timeline and Funding:

The NHSS began development on April 1, 1997 with \$15 million allowed for the project, to be distributed over a three-year period.

Status:

The “pieces” of the network will be piloted over the three-year timeline. The exact locations and subjects for all 14 pilot projects have not been fully developed at this time.

Partners:

At this stage, the majority of the partnerships are from the public health network. However, private interest and influence are growing, including:

- Academia (surveillance often suggests research that needs to be done)
- General non-governmental organizations (NGOs) (e.g., Canadian Institute for Health Information)
- Hospitals
- Professional societies (e.g., the Royal College of Physicians and Surgeons)
- Public and private laboratories
- Specifically focused NGOs (e.g., Canadian Cancer Society)

Key Issues:

- Consensus on what information is necessary
- Lack of human capacity at the local level; training and support needed on an overwhelmingly large level
- Privacy/confidentiality relating to data access
- Standardization of traditional methods of gathering health data (i.e., there is no standard, at any level, for patient records, death certificates, etc.)
- Standards, primarily data standards

Contact:

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HPPB Surveillance Transition
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***First Nations Health
Information System
(HIS)***

...a comprehensive computerized system to standardize data collection and health surveillance among Canadian First Nations.

Vision:

The Health Information System (HIS) is a unique community-based computerized system which was developed in partnership with, and is jointly owned by, the Medical Services Branch and Ontario First Nations. It is the initial step in attaining a comprehensive First Nations health surveillance system. It provides a holistic and culturally relevant First Nations case management tool at the community level as well as a First Nations surveillance tool at the community, tribal council, zone, regional and national levels. The HIS will complement the NHSS and NPCH initiatives.

Goal:

The primary goal of this initiative is to deploy HIS in over 500 First Nations communities throughout Canada. The objectives are to:

- empower First Nations to establish their own program priorities at the community level
- facilitate a proactive approach for the management of health issues
- increase the reliability of collected data
- provide comprehensive information enabling effective program evaluation and review
- provide enhanced and standardized health information and reporting pre and post transfer
- reduce the frequency and time consumed by manual tasks, duplication and forms.

Lead Technology:

- Application - Oracle Developer 2000 for Microsoft Windows 95
- Client Workstation - Oracle workgroup server tools within a Microsoft Windows 95 operating system
- Server - Oracle Workgroup Server tools with a Microsoft Windows NT operating system.

A major telecommunications study is being undertaken which will determine the most appropriate telecommunications

solution for the deployment of the HIS throughout First Nations communities in Canada.

Lead Health Agency:

Medical Services Branch, Health Canada

Partners:

The HIS is jointly owned by the Medical Services Branch of Health Canada and the First Nations of Ontario. First Nations communities and organizations throughout Canada will be partners in the deployment and ongoing management of this system.

**Applications/
Initiatives:**

The HIS is one application with the following major subsystems:

- Abuse profile
- Chronic disease
- Client information
- Client mortality information
- Environmental
- Immunization
- Maternal health
- Medication
- Medication allergy/adverse reaction
- Psychosocial
- Public health education
- Reportable disease
- Test/exam

Status:

The application has been developed and tested. It is being deployed in Ontario regions (29 communities) and is being tested in Atlantic Canada. It is expected that by the end of the 1997-98 fiscal year the HIS will be fully deployed in Atlantic and Ontario First Nations communities, and will have begun deployment in the First Nations communities of two other Medical Services Branch regions. The application will be translated into French for deployment in Quebec.

Key Issues:

Governance
Interrelationship with other health information and surveillance systems
Partnership protocols
Privacy and confidentiality

Surveillance capacity at the local and regional levels

Timeline and Funding:

The HIS for First Nations Communities in Ontario began development in April 1994. It is expected that the system will be fully implemented for other First Nations and Inuit communities in Canada over the next three years.

At this stage, three years of funding amounting to \$5.25 million has been granted.

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***G7 Global Healthcare
Applications Project***

The aim of the Global Healthcare Applications Project is to support the development of information technology applications to the health sector in G7 countries on a small scale, through private-public collaboration, for future extension of the successful applications to industrialized countries and eventually to the rest of the world.

National Healthcare Applications Project co-ordinators have been designated to identify and develop several sub-projects to be implemented under the leadership of a national co-ordinator:

- Enabling mechanisms for global health networks
- Evidence and effectiveness
- Improving the prevention, diagnosis and treatment of cardiovascular diseases
- Improving the prevention, early detection, diagnosis and treatment of cancer
- International harmonization of use of data cards in health care
- Medical Imaging Reference Centre Project.
- Multi-language anatomical digital database
- Telemedicine

- Towards a global health network

The status of the projects vary.

Contact:

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Industry Canada

*Health Industries
Branch*

The Health Industries Branch promotes the industrial development and international competitiveness of the Canadian pharmaceutical, medical devices and health services industries. It acts as an industry advocate for regulatory issues, and initiates and supports trade, investment and technology development activities.

The strategy and action plan for ongoing telehealth initiatives is designed to:

- Develop and market a sector database of telehealth companies to ensure more reliable data analysis and promote alliances and technology opportunities
- Facilitate work on standards development and demonstration initiatives
- Identify clusters and strategic opportunities, and facilitate alliances
- Participate in the development of partnership workshops to facilitate alliances between health services and information technology sectors (this includes three workshops, in the Atlantic region, Toronto and Vancouver, and will involve Industry Canada, CANARIE Inc. and Health Canada)

- Promote strategic alliances to capitalize on consumer health education opportunities (i.e., health/information technology partnerships, Community Access Program, Student Connections, Canadian Institute for Scientific and Technical Information library resource, etc.)
- Undertake a study of international markets and develop a strategy to capitalize on Canadian strengths, e.g., consortia for international financial institution opportunities.

Contact:

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Industry Canada
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***Telehealth Industry in
Canada***

The following is a summary of Dr. Jocelyne Picot's research, entitled *The Telehealth Industry in Canada*.

Currently in the final stages of completion, *The Telehealth Industry in Canada* has been written in the style of a sector competitiveness framework (SCF). SCFs are a series of studies published by Industry Canada to provide more focused, timely and relevant expertise about business and industries. They identify sectors or sub-sectors which have potential for increased exports and other opportunities leading to jobs and growth. With the emerging telehealth industry still unfamiliar to many Canadians, it is the purpose of this document by Dr. Picot, to shed some light on where this sector has been, and where it has the potential to go.

By almost any measure, the telehealth industry in both Canada and the United States, even in its oldest and best-known form — remote telemedicine — has remained, up until recently, a health services sub-sector with a small devoted set of pioneers, researchers and practitioners operating in an environment dependent on government subsidies and research and development grants. As late as

January 1996, the field was still very small and had not grown much since its origins some 30 or 40 years ago.

Several factors are helping to propel this industry forward and make appropriate, desirable and affordable products and services more widely available. These innovations have the capacity to provide good returns in an increasingly competitive environment while still helping to maintain the high quality of health care enjoyed by Canadians today. Yet despite the potential, many challenges and unresolved barriers remain as powerful deterrents to development and implementation. Some are being ironed out, mostly in relation to privacy concerns, standards setting and interoperability, credibility and availability of content, access, the settling of rights to practice and payment, and the recognition of the need for training. However, even after these major issues are settled, the need will remain for an effective distribution of top practices and good models for collaboration, partnership, design, implementation, cost-effectiveness, evaluation and technological transfer of telehealth systems.

There have been many definitions of “telemedicine” in the literature, but few apt definitions of “telehealth,” an integrating and more holistic term encompassing all the telematics applications in health and health care. In Europe, the field is referred to as “health care telematics.” The definition below has been adopted for this study of the Canadian field. It reflects the changing nature of the twin fields of health and medical information on the one hand, and telemedicine on the other hand. Historically, these two fields operated separately but are now merging not only because the technology is making it possible — current applications are making it necessary.

Telehealth is defined as the use of communications and information technology to deliver health and health care services and information over large and small distances.

The telehealth industry encompasses practices, products and services bringing medical care and health information to remote locations. It extends the arm of the health care system for people at home and provides health services directly to consumers. It offers continuing medical and health education, and assists consumers in obtaining emergency assistance wherever they may be. Moreover, it incorporates health informatics and telematics applications, using communications technologies in association with monitoring and medical devices, emergency systems, health, medical and computer systems to transform and transfer medical and health content, and deliver health care services, and education and assistance at a distance. As defined, it embraces a wide range of traditional telemedicine practices and activities, as well as newer applications combining medical and health informatics and telematics systems and applications.

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NATIONAL HEALTH AND HEALTH-RELATED NGOS

Canarie

The Canadian Network for the Advancement of Research, Industry and Education (CANARIE) is a non-profit, industry led and managed consortium created in 1993 as an innovative way for the federal government and private sector to collaborate in stimulating the development of the Information Highway in Canada. CANARIE's mission is to facilitate the development of critical aspects of the communications infrastructure of a knowledge-based society and economy in Canada, and in so doing to contribute to Canadian competitiveness in all sectors of the economy, to wealth and job creation and to our quality of life.

In an effort to take a more active role in fostering the adaptation of information technologies to the health sector, CANARIE has formed a committee called the Health Information Infrastructure Advisory Committee. It consists of 10 representatives, two from within CANARIE and eight from across the country (Victoria Hospital Corporation, Research and Program Policy Directorate of Health Canada, Memorial University of Newfoundland, Health Industries Branch of Industry Canada, University of Ottawa Heart Institute, Maisonneuve-Rosemont Hospital, University of Calgary and SmartHealth). The Committee's position paper, called "The Canadian Health Information Infrastructure," authored by Dr. Jennett, was released at the end of September 1996.

Two major ongoing health information initiatives at CANARIE are "Towards A Canadian Health Iway: Visions, Opportunities, and Future Steps" and the Technology and Applications Development (TAD) program.

The former, a collaborative project by CANARIE, Industry Canada and Health Canada, is a report designed to accelerate discussions among potential stakeholders and other public and private sector organizations in Canada leading to the development of the Canadian Health Iway. The Canadian Health Iway is envisioned as a network of networks, applications and people that collectively support a wide range of health-related systems, activities and services in support of Canadians in all parts of the country. It will be a virtual "information centre" that is created and used by communities and individuals across Canada. It will be open and accessible, yet assure sufficient confidentiality and privacy to assist decision making by health professionals and patients; support research and training; facilitate management of the health system; and respond to the health information needs of the public. The Network will be an

agent of change for the health system and contribute to improving the health of Canadians. It will also foster the development of globally competitive Canadian technologies and services.

TAD is a shared-cost funding program with the goal of stimulating innovative research and development projects that lead to new networking products and applications for the marketplace. Projects that focus on the development of products or applications with commercial potential in the area of health care and quality of life were especially encouraged. Priority areas in this part of the competition were identified as health education, consumer health information and telemedicine/remote diagnostic applications. All projects with commercial potential which led to innovative, networking-related products or applications, especially multimedia (i.e., broadband) applications, were considered. Work for the project had to be performed in Canada.

All project applications that identified themselves as health projects were evaluated relative to the following criteria:

- Contribution to health reform and the emergence of integrated health systems in Canada
- Degree to which technological or other standards are advanced
- Nature and degree of contribution to the health of Canadians
- Nature and degree of technology-enabled innovation for the health sector.

Health care project descriptions include:

- 100% Java distributed heterogeneous database communication system
- Canadian telehealth digital radiology
- Digital X-ray detector system
- Enterprise medical image management server
- EQUALITY
- MediMedia healthcare network
- Multimedia medical record
- Network access to computational biology tools for medical research
- On-line interactive health care system
- Operating room extension
- PURE BLOOD
- VIPERS
- VITAL solutions
- Voice verification system.

In the 1995 competition, over 330 proposals were reviewed; in 1996, over 250 proposals were reviewed. In total, CANARIE has now made 146 awards totalling \$47 million. Total investments in these projects, including private sector contributions, has been over \$170

million, and more than 370 companies have been involved. The last major TAD competition planned in Phase II of CANARIE ends April 1, 1999.

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Canadian Institute for Health Information (CIHI)

The Canadian Institute for Health Information (CIHI) plays a critical role in the development of Canada's health information system. CIHI is a federally chartered but independent, not-for-profit organization. It brings programs, functions and activities from the Hospital Medical Records Institute (HMRI), the MIS Group, Health Canada (Health Information Division) and Statistics Canada (Health Statistics Division) together under one roof. In addition, the Institute is launching several new key initiatives as it assumes a leadership position in health information.

CIHI operates from its head office in Ottawa and regional offices in Toronto, Vancouver and Edmonton. Its primary functions include:

- Collecting, processing and maintaining a comprehensive and growing number of health databases and registries
- Covering health human resources, health services and health expenditures
- Producing value-added analysis from its information holdings
- Setting national standards for financial, statistical and clinical data as well as standards for health informatics technology.

The Partnership for Health Informatics/Telematics was formed in March 1996. It plays a leadership role in shaping the national agenda for health information management and information technology standards. Members of the Partnership are among Canada's leaders in health and health information technology. There are three overall goals of the Partnership:

- Collaborate with other standard-setting organizations in Canada and internationally

- Define and adopt emerging standards for health informatics in order to ensure the evolution of a non-redundant, non-conflicting set of standards for Canada
- Utilize the standards to enable the development of national, longitudinal electronic health records, accessible to consumers, health providers, researchers, policy makers, health monitoring and surveillance agencies.

The Partnership for Health Informatics/Telematics is organized around six working groups that address key standards domains:

- Advanced health technologies
- Classification and nomenclatures
- Health identification systems
- Health information model
- Information exchange protocols
- Privacy, confidentiality, data integrity and security
- Terminology

The Partnership supports the developmental work undertaken by each of the working groups.

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Canadian Medical Association (CMA)

The Canadian Medical Association (CMA) provides a national voice for physicians on issues such as federal health financing, tobacco legislation and quality prescribing practices. The CMA also promotes the public image of the medical profession through the media, the CMA president's speaking tours, medical science publications, educational programs and CMA Online.

A leader in health care and promotion, CMA develops policies on public health and clinical practice issues, such as core services, the role of the primary physician and family violence. Information on health policy evaluations and economic analysis, originating from within the CMA and other agencies, is available to CMA members. Issues include federal-provincial health financing, physician resources and health system reform. CMA negotiations

conferences train the teams that negotiate contracts between divisions and provincial/territorial governments, and the association monitors health care commissions and government task forces.

The CMA Council on Medical Education links physicians and the academic medical establishment. The CMA is involved in accreditation of Canadian medical schools, co-ordinates accreditation for training programs in 10 health disciplines and provides a forum for such issues as health education and human resource planning.

CMA Online is the Internet service of the Canadian Medical Association and its wholly owned financial subsidiary, MD Management. The CPG Infobase is the CMA's major information technology venture, and can be found on CMA Online. CPGs are defined as systematically developed statements to help physicians and patients make decisions about appropriate health care in specific clinical circumstances. The clinical practice guidelines in this collection were produced or endorsed in Canada by a national, provincial or territorial medical or health organization, professional society, government agency or expert panel and have been developed or reviewed since 1990.

The CMA is now also conducting "Doctors on the 'Net," a series of training courses designed to develop the skills physicians need to access clinical, research and educational information from the Internet. Participants will acquire a basic working knowledge of the Internet in the introductory course, focusing on medical resources. The session is hands-on, with one participant per computer, and includes interactive exercises and problem-solving activities. This introductory course, initially presented in conjunction with the 1997 CMA Annual Meeting, is the first in a series of planned Internet training courses.

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Canadian College of Health Service Executives (CCHSE)

The Canadian College of Health Service Executives (CCHSE) is a national not-for-profit professional association for health services management executives. The College is committed to improved health for Canadians through excellence in management, public policy influence and innovative collaboration.

The College's diverse membership makes it a unique and major force in health services management. Its membership consists of over 3,000 members from across all sectors of health services. The members hold a variety of positions and backgrounds. The College is one of the few health organizations that is represented in all areas of the continuum of care.

The College's activities cover a wide area of interest, including professional certification, standards of ethical conduct, continuing professional development, regional chapters, awards, information services, career services, public policy and advocacy, and health services standards.

Information technology is being used in two ways to deliver the goals of the CCHSE: Internet applications and interactive distance learning. The CCHSE web site has been operational for approximately a year and a half and is the main focus of information technology for the College, via enhancing its existing Internet capabilities. This will include registering a personal domain for the CCHSE in the near future.

The interactive distance learning educational series conducted by the CCHSE is broadcast via digital satellites to Insight's network of electronic classrooms in Vancouver, Calgary, Winnipeg, Mississauga, Toronto, Ottawa and Montreal. There are four topics:

- Clinical Resource Management: Developing a Practical Framework, a two-hour interactive satellite seminar held in June 1997
- Merging People, Not Just Institutions: Lessons Learned in Bargaining Unit Negotiations, a two-hour interactive satellite seminar also held in June 1997
- Specific Operational or Strategic Issues Programs, a joint CCHSE/INSIGHT initiative that consists of a monthly one to two hour session starting in June 1997
- Update on Recent Developments in the Health Service Industry, a joint CCHSE/INSIGHT Interactive Distance Initiative that consists of a 90-minute bi-monthly test pilot program for one year starting in the fall of 1997.

The CCHSE hopes to begin working toward setting an official direction for health information technology in the near future. At this time, the College is in the process of deciding what goals it wants to achieve via such technology.

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Canadian Nurses Association (CNA)

The Canadian Nurses Association (CNA) is a federation of 11 provincial/territorial nursing associations that speaks for Canadian nurses and represents Canadian nursing to other organizations and to government on national and international levels. The CNA represents over 110,000 registered nurses from broad and diverse nursing backgrounds. Its mission is to advance the quality of nursing in the interest of the public. Its corporate mandate is to:

- Act in the public interest for Canadian nursing and nurses, providing national and international leadership in nursing and health issues
- Promote high standards of nursing practice, education, research and administration in order to achieve quality nursing care in the public interest
- Promote uniform and high quality regulatory practices in the public interest and in collaboration with nursing regulatory bodies.

The CNA has two major spheres of activity in relation to health information. In the first, the CNA draws on health information in order to support nursing practice. By tracking trends through health information, the CNA is able to define and target policy initiatives, represent and advocate for safe nursing practice, and develop standards and guidelines. Second, as a generator of information, the CNA maintains databases that support the regulation of registered nurses within Canada, nursing and human resource planning, and nursing practice. The CNA's information technology-related initiatives include electronic databases used for regulatory support and nursing resource planning, CNA Online (the CNA web site), an electronic catalogue for the Helen K. Mussallen Library and selected electronic publications available from CNA Online.

Major upcoming information-related initiatives include a project involving the CNA and the Canadian Association of University Schools of Nursing (CAUSN), and CAUSN and CNA affiliate members, to develop an innovative network to support evidence-based nursing practice. As well, the CNA is developing, as part of a national health information framework, a nursing data set that reflects the nursing services required by patients throughout the health care system. Online publications are being expanded as is electronic access to library holdings.

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Heart and Stroke Foundation of Canada

The mission of the Heart and Stroke Foundation of Canada is to further the study, prevention and reduction of disability and death from heart disease and stroke through research, education and the promotion of healthy lifestyles.

The use of health information technology at the Heart and Stroke Foundation is vast. The Foundation has formed the Heart Health Information Committee to focus on the development of information technology to serve the mission of the Foundation. The Committee's detailed business plan outlines three phases of action. Phase I, which is now complete, emphasized the development of internal Internet applications, including internal e-mail and several web sites. Phase II, which is in progress, aims to develop external Internet applications by linking each of the provincial offices, and Phase III will expand connections on an international level. More important, Phase III will see an emphasis on creating inter-organizational links, with other heart-health related organizations.

Three web sites were developed during Phase I. The Heart and Stroke Foundation's public web site has received a five-star rating and is Yahoo Canada's "Pick of the Week." A second web site is a research tool, aimed at the heart health research community. And, a third development has been a collaborative project with the Canadian Cardiovascular Society.

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Alzheimer Society of Canada

The Alzheimer Society is a not-for-profit Canadian health organization. The three levels of the Society — national, provincial and local — work together to form a nation-wide network of services to help Canadians affected by Alzheimer disease. The Society's mission is to alleviate both the personal and social consequences of Alzheimer disease and promote the search for a cause and cure for the disease. Providing health information is an essential part of the Society's service delivery. To this end, the society informs individuals, families, care providers, health professionals and the general public about Alzheimer disease.

Currently, there are two major technology-related initiatives that support this work. The Alzheimer Society web site was launched in April 1997. It provides extensive information on the disease, care, research and the work of the Society, and provides an interactive forum for caregivers, Society staff and volunteers across the country.

The Society is also administering a sector development project. This project identifies the challenges and opportunities that technology presents to national voluntary health organizations; examines existing technological communication among the national voluntary sector; and looks at the technologies supporting the work of national voluntary health organizations and explores the application of technology within the sector.

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Canada's Coalition for Public Information (CPI)

Canada's Coalition for Public Information (CPI) is a coalition of organizations, public interest groups and individuals whose mandate is to foster universal access to affordable, useable information and communications services and technology. The Coalition provides an effective grassroots voice for promoting and facilitating access to the benefits of telecomputing technology to maximize participation in a knowledge society and economy. The Coalition is a voting member of the Canadian Network for the Advancement of Research, Industry and Education (CANARIE Inc.), and has taken an active role in its activities. The Coalition also

had a representative on the federal government's Information Highway Advisory Council (IHAC).

The Coalition's goal is to ensure that the developing information infrastructure in Canada serves the public interest, focuses on human communication and provides universal access to information, in order to foster the development of a knowledge society. CPI is working to ensure that universal access to affordable information communication services and technology provides every Canadian with the opportunity to participate in and contribute to the development of a knowledge society and economy. The major roles of the Coalition in furthering a knowledge society are to:

- Create links with and among other organizations which share common views and positions
- Define, shape and communicate public policy positions and issues
- Serve as an open think tank and provide a conduit for the public to participate in the debates and discussions around the issues.

Health Information is a major focus of the CPI. In Toronto in October 1997, a conference is being presented by the CPI called Digital Knowledge II Conference: Building Electronic Space For Community Health Information: Planning Our Community Networked Health Care Future. Its goal is to create a model for the delivery of digital health information to every Canadian community. Its target audience is community leaders working to establish local consumer health information networks and decision makers from health institutions and organizations working to provide content and design systems for the consumer health information highway.

The conference has many objectives, including plans to:

- Define a health information safety net to prevent the development of information "haves and have nots" in Canada's healthy, knowledge society
- Provide critical input to CANARIE's Canadian Health Iway proposal
- Define the health information people need
- Develop a national forum for health associations and volunteers that will help them apply resources to our health information networks, its content and services
- Examine the concept of community electronic space
- Sketch a blueprint for future public health electronic community services, resources and policies
- Spotlight key public policy issues such as privacy, equitable access and content.

Sponsors of the conference are CANARIE Inc., Health Canada and Industry Canada. There are several supporting organizations as well, including the Canadian Health Record Association, the Canadian Information Processing Society, the Canadian Life and Health

Insurance Association Inc., the Canadian Organization for Advancement of Computers in Health, the Information and Privacy Commissioner of Ontario and Smart Toronto.

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Canadian Public Health Association (CPHA)

The Canadian Public Health Association (CPHA) is a national, independent, not-for-profit, voluntary association representing public health in Canada with links to the international public health community. The CPHA's members believe in universal and equitable access to the basic conditions which are necessary to achieve health for all Canadians. Its mission is to constitute a special national resource in Canada that advocates for the improvement and maintenance of personal and community health according to the public health principles of disease prevention, health promotion and protection, and healthy public policy.

The CPHA mounted a web site in the spring of 1996 featuring organizational information on structure, governance, programs and policies. Plans for the future include expansion of the web site, particularly in the area of document delivery and online ordering of publications and materials. Also online are trials of searchable databases for a variety of programs and projects.

The CPHA's National AIDS Clearinghouse, the only national documentation centre for AIDS prevention/education information, works with a custom-designed database for ordering, inventory control and tracking.

Internally, the Association has e-mail capacity for each of its staff. An intranet system will be operational by the end of August 1997. In order to contain costs, CPHA uses teleconferencing in lieu of face-to-face meetings. Future initiatives include the development of a playable CD-ROM version of "plain-word," a game developed by the Association's National Literacy and Health Program.

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Canadian Association for Quality in Health Care (CAQHC)

The Canadian Association for Quality in Health Care (CAQHC) was formed in 1980 to provide a forum for health care professionals and others interested in quality management through support networks, educational programming and the dissemination of resource materials. The mission of the CAGHC is to promote and support continuous improvement to achieve an integrated approach to quality, risk and utilization management as essential components of sound governance, corporate leadership, and clinical and administrative practices in Canadian health care.

The Association meets the needs and expectations of its members by providing:

- Communication between those involved in health care disciplines and the public through publications, support networks and organized events
- Education related to continuous quality improvement/total quality management, risk management and utilization management
- Liaison with other professional organizations advocating quality in health care including the Canadian College of Health Service Executives, the Canadian Council on Health Services Accreditation, the Canadian Health Record Association, the Canadian Healthcare Association, the Canadian Medical Association, the Canadian Long Term Care Association, the Canadian Standards Association and sister associations in the United States and the United Kingdom.

Quality management is a multi-dimensional process that is integral to every aspect of health care. Quality issues involve access to care, continuity of care, utilization of health services, patient education, compliance and satisfaction, and education of providers of health care

services. Health care professionals require skills in data management, marketing, education and training. They must serve as agents of change within their institutions, in order to support continuous improvement, and among organizations, to promote collaboration and partnerships to meet the needs and expectations of those served by the CAQHC.

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Royal College of Physicians and Surgeons of Canada (RCPSC)

The Royal College is the main certifying body for Canadian specialists. As such, the College prescribes requirements of specialty training in 53 medical, laboratory and surgical specialties and sub-specialties. It accredits the specialty residency programs; judges the acceptability of residency education and conducts the certifying examinations. The College also assists its 30,000 members (fellows) worldwide to maintain their competence through the MOCOMP® Program. The College is interested in health and public policy and biomedical ethics. The College is not a licensing or disciplinary body.

Health information technology at the College occurs mainly through two venues. The College's web site allows residents and members to access information relevant to their specialty, of general interest to specialists and to inform volunteers of the College who work on committees. Second, the College promotes the maintenance of competence of its members through its MOCOMP Program. The web site is also a key component of this program, as is a software program called PCDiary®.

For the MOCOMP program (looking after the continuing medical education needs of specialists), the role of health information is multi-faceted. Physicians use information to make clinical decisions and to keep up-to-date with advances and changes in medicine. The MOCOMP program focuses on making sense of the information as it relates to continuing professional development. It tracks the information related to physician learning (or continuing professional development). This information includes the learning item, the stimulus for the item, the resources used to gain an answer or solution, and the outcome. These variables are fed back to MOCOMP in a standardized form from users of the PCDiary

software. The information is then fed back to the individual in a learning portfolio. This yearly summary indicates the individual's summary of activities compared to the peer group (specialty group). The data are also fed into the Question Library on the Internet. This allows all participants to search the main database of questions by select fields (e.g., specialty group) or by a free-text search engine. Question Library includes conferencing capabilities and links to MEDLINE. The conferencing feature allows participants to discuss questions that have been posted in the Question Library in a chat group and private e-mail format.

Apart from the web site and the PCDiary software, both of which are developments that have occurred within the last three years, the College is in the midst of a major file conversion project to modernize its membership database. Additionally, as part of the web site, the College offers the Caucus software product to assist discussion groups for committee work and specialty interest groups for members. This is a recent addition to the web site and still being developed.

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HEALNet (Health Evidence Application and Linkage Network)

HEALNet is a national health research network with a mission to develop marketable evidence-based decision support strategies that will improve the health and wealth of Canadians. Reflecting its dual mandates of social utility and commercialization, its objectives are to:

- Conduct research and training toward developing and evaluating health care decision tools that will improve the quality of health care delivery within realistic costs
- Contribute to Canada's economic competitiveness through appropriate partnerships with the private sector.

Established in 1995 through Industry Canada's Networks of Centres of Excellence Program, HEALNet was awarded \$8.6 million by the Medical Research Council (75%) and Social Sciences and Humanities Research Council (25%).

The Network's research sector, involving more than 100 researchers across 17 universities and four research institutes, represents a spectrum of disciplinary perspectives from the highly technical to the socio-behavioural. Developing additional partnerships with the private sector, labour, government, professional associations and other public sector organizations is critical to achieving the Network's mission.

HEALNet's research vision is designed to promote its unique core competence, "adding meaning to health information," encouraging evidence-based decision making by developing strategies that provide decision makers with information about data quality and applicability as well as the educational tools to enhance interpretive capacity. The research program is organized into six theme areas: four applied research themes (clinical, health care management, regional health planning and workplace/work force) representing different health care decision-making settings and two fundamental research themes (health informatics and population health). Network projects focus on one or more aspects of the decision tool development process — information content, applications and technology development.

A number of tools to assist clinical decision making are at advanced stages of development. Disease guidance systems are being developed to assist with diagnosis, generating patient orders and tracking results for conditions such as stroke. Other products, such as Clinical Surveyor, developed by HEALNet's first spinoff company, InfoWard Inc., link patient-reported data with best research evidence to suggest optimal care and prevention strategies. CLINT (Clinical Integrator), a shell program for these and other information products, allows secure, multi-user access to evidence-based resources on networked or standalone systems.

Decision tools for use in other health care environments are also being developed. Examples include benchmarking strategies for assessing organizational performance, ergonomic assessment tools for maintaining healthier workplaces and tools to assist regional planners in resource allocation decisions. The network strives to develop an integrated approach to the management of health information.

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National Institute of Nutrition (NIN)

The National Institute of Nutrition (NIN) is a national, private, non-profit organization established in 1983 to improve the health of Canadians through education and research. Programs are targeted primarily to health professionals, industry, educational institutions, government, the media and the public. NIN fosters a unique partnership among respected authorities from nutrition and health sciences, education, industry and government. This partnership is reflected in the Institute's structure, collaborative research projects and communication programs.

NIN's main health information initiative using information technology is its web site, which houses information about the Institute, its structure and function, news releases, coming events, consumer-friendly newsletters and tips, and a topic index of Institute resources. NIN intends over the next year to redesign the site to make it more attractive and user-friendly, and to increase the content and the interactive nature. NIN is also considering the use of its site to survey consumers on specific topics.

NIN is a participant in a joint web site launched last October, called Child and Family Canada, at <http://www.cfc-efc.ca>. The site is co-ordinated by the Canadian Child Care Federation and provides information to parents and caregivers on a wide range of subjects related to children. NIN provides nutrition information to the site, and its resources have been among the most frequently accessed, especially those relating to teenage eating habits, eating disorders and folic acid.

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