Health Informatics Professional Competencies

Digital Health
CANADA

Introduction

Purpose of this document

This resource clearly identifies the knowledge and skill requirements within the seven domains presented in the Digital Health Canada Career Matrix and Health Informatics Courses.

Content is separated into three sections

Information Sciences

Information Management
Technology Ecosystem

Health Sciences

Clinical and Health Sciences
The Canadian Health System

Management Sciences

Healthcare Transformation
Project Management
Analysis and Evolution

Who might find this information useful?

Health informatics professionals planning career advancement

Human resources professionals looking for hiring guidance

An individual with a competency in **Information Management** will be able to:

A1.1   Advance the management of information as a key strategic resource

A1.2   Demonstrate an understanding of the key attributes of data and information (e.g. quality, integrity, appropriateness) and their limitations within the context of intended uses

A1.3   Determine appropriate data sources and gaps in data sources in relation to identified business needs across the healthcare system

A1.4   Demonstrate an understanding of the data interrelationships and dependencies among the various health information systems (e.g., decision support systems, electronic health records, order entry, registries, etc.)

A1.5   Demonstrate an understanding of the implications of ethical, legislative, and regulatory requirements related to the management of health information

A1.6   Apply accepted policies, principles and guidelines for the management of health information (e.g. Digital Health Canada Guidelines and Canadian Health Information Management Association practices, business intelligence, data security, etc.)

A1.7   Demonstrate an understanding of relevant health information standards and their appropriate use (e.g. classifications, nomenclature, interoperability, standards, messaging, terminology, etc.)

A1.8   Integrate data quality principles and methodologies into the identification, use and management of information sources (people and systems)

A1.9   Demonstrate an understanding of system integration and clinical workflow among health information systems (e.g. decision support systems, electronic health records, order entry, registries, etc.)

A1.10   Demonstrate an understanding of the principles of good information governance

A1.11   Demonstrate an understanding of privacy, security and confidentiality concepts and the role they play in building and maintaining trust in the system to protect personal health information

A1.12   Demonstrate an understanding of existing privacy frameworks and how to apply them to projects (e.g. strengths and weaknesses of these frameworks)

A1.13   Demonstrate the ability to identify the types of roles in the Information Management domain (CIO, CTO, CNO, CPO, etc.)

An individual with a competency in **Technology Ecosystem** will be able to:

A2.1	Demonstrate an understanding of key information technology concepts and components (e.g., networks, storage devices, operating systems, information retrieval, data warehousing, applications, firewalls, etc.)
A2.2	Engage relevant stakeholders at the appropriate stages of the system life cycle
A2.3	Address information, business, and technical requirements to meet the full range of stakeholders' information needs
A2.4	Contribute to the selection and utilization of appropriate information technologies to meet business requirements
A2.5	Apply appropriate health informatics standards and enterprise models to enable system interoperability (e.g., terminology, data structure, system to system communication, privacy, security, safety, governance)
A2.6	Apply knowledge of health data, information and workflow models to information technology solutions
A2.7	Apply information technology best practices (e.g., quality management systems, testing, service level agreements, business continuity and incident management) throughout the system life cycle
A2.8	Apply best practices and solutions required to manage the security of data, systems, devices and networks (e.g. COACH Guidelines for the Protection of Health Information)
A2.9	Demonstrate an understanding of emerging technologies and their impact on healthcare including addressing the interoperability challenges to sharing health data among systems and providers
A2.10	Promote the safe and appropriate use of health information technologies to ensure patient safety

An individual with a competency in **Clinical and Health Services** will be able to:

B3.1 Apply knowledge of basic clinical and biomedical concepts, clinical care processes, technologies and workflow for purposes of analysis, design, development and implementation of health information systems and applications

B3.2 Understand basic clinical terminology and commonly used abbreviations and acronyms

B3.3 Recognize commonly used formats, structures and methods for recording and communicating clinical data and how these are incorporated into system and application use

B3.4 Foster the adoption and use of health information systems in clinical settings

B3.5 Facilitate appropriate consumer use of health information and communication technologies

B3.6 Assess and mitigates clinical safety risks associated with health information and systems throughout the system life cycle

B3.7 Facilitate clinicians' use of electronic decision support tools in accessing evidence to support practice (e.g. clinical decision support, closed-loop medical administration)

An individual with a competency in the **Canadian Health System** will be able to:

B4.1	Demonstrate knowledge of health and health systems in Canada and appropriately apply this information to work products and services, including: a. Key characteristics (e.g. governance, funding, structures, related organizations, emerging trends, etc.) b. Determinants of health (e.g. environment, genetics, socioeconomic) c. Key factors affecting healthcare (e.g., demographics, new technologies, incentives) d. Understanding basic Health informatics associations across Canada (e.g. Digital Health Canada, Canadian Nursing Informatics Association, Information Technology Association of Canada, Canadian Institute for Health Information, Infoway, etc.) e. Understanding the cultural and community context of care access and delivery
B4.2	Demonstrate knowledge of the way HI benefits are realized and measured in the Canadian healthcare system
B4.3	Demonstrate an understanding of different types of Canadian healthcare delivery models across the continuum of care and their interrelationships (e.g. hospitals, clinics, ambulatory centres and community health agencies, regional health authorities)
B4.4	Demonstrate knowledge of strengths and weaknesses of how people, resources and information flow through the health system and key drivers (e.g. chronic disease management)
B4.5	Apply knowledge of the roles and relationships of health professionals along with the organizational and regulatory structure in which they work
B4.6	Address the challenges related to the adoption and realization of clinical value of information systems in the health sector
B4.7	Understand emerging needs and approaches to including the privacy of personal health information while improving care delivery and managing health systems (e.g. OCAP)
B4.8	Promote the safe and appropriate use of health information technologies to ensure patient safety

An individual with a competency in **Healthcare Transformation** will be able to:

C5.1 Apply the basic theories, concepts and practices of management including: i. organizational behaviour and culture ii. human resources iii. financial and budget management iv. governance, accountability, risk analysis and management vi. procurement and vendor relationships, and vii. customer relationships

C5.2 Contribute to organizational plans and strategies to ensure that information and systems enable business goals and strategy

C5.3 Promote an information culture by facilitating appropriate uses of information and knowledge

C5.4 Facilitate self, individual, team and organizational learning and development through the use of appropriate technologies, communication channels and organizational skills

C5.5 Use audience-appropriate communication and language to present information and convey concepts to relevant stakeholders

C5.6 Apply best practices in quality improvement and process engineering to facilitate business and clinical transformation

C5.7 Contribute to ongoing evaluation of the functionality of systems so that they can evolve to support best practice in clinical care

C5.8 Apply best practices of change management in the implementation of new processes or systems

An individual with a competency in **Project Management** will be able to:

C6.1 Apply project management principles and best practices (e.g., project charter, scope, life cycle, budgets, resourcing)

C6.2 Apply project management principles and best practices throughout the project lifecycle by fostering collaboration and taking into account the unique challenges inherent in health information systems projects

C6.3 Anticipate issues and opportunities and mitigates risks associated with projects

An individual with a competency in **Analysis and Evaluation** will be able to:

C7.1	Identify and frames information queries in collaboration with stakeholders in order to meet their needs for analysis and interpretation of data
C7.2	Identify relevant sources of data and information in order to: i. assess the quality of information, and ii. draw appropriate conclusions
C7.3	Demonstrate an understanding of appropriate analytical and evaluation techniques and concepts (e.g., qualitative and quantitative methods, basic statistical techniques, indicators and evaluation measures)
C7.4	Contribute to quality analysis by organizing and transforming data into reliable and meaningful information for diverse audiences
C7.5	Present data and information in a way that is effective for users
C7.6	Demonstrate knowledge of indicators and metrics for healthcare delivery and population health

Digital Health Canada is a member-supported not-for-profit professional association that connects, inspires, and empowers the digital health professionals creating the future of health in Canada.

Our members are a diverse community of accomplished, influential professionals working to make a difference in advancing healthcare through information, technology, and data management.

Digital Health Canada fosters network growth and connection; brings together ideas from multiple segments for incubation and advocacy; supports members through professional development at the individual and organizational level; and advocates for the Canadian digital health industry.

Digital Health Canada membership is ideal for anyone with an interest in health informatics, health information management, digital health, m-health, e-health, or related healthcare issues and practices.

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