

Digital Health Canada 2024 Winter Lecture Series
Clinical and Health Services - **References**

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

1. [Digital Health Canada - Resource Guide to Digital Health in Canada](#)
2. [HIMSS TIGER Interprofessional Community - Global Informatics Definitions](#)
3. [Clinical Data Exchange Interchange Standard Consortium](#)
4. [UMLS \(Unified Medical Language System\) – Introductory Webinar \(30 minutes\)](#)
 - a. Other webinars in this series from NIH -
https://www.nlm.nih.gov/bsd/disted/video/clin_info/index.html
5. [Workflow Analysis Article - Using a Clinical Workflow Analysis to Enhance eHealth Implementation Planning: Tutorial and Case Study](#)
6. [Lean Methodology – AHRQ article – Improving Care Delivery through Lean: Implementation Case Studies](#)
7. [IGOE Process](#) – Introductory Article - Kathy A. Long, "What is an IGOE?" Business Rules Journal, Vol. 13, No. 1, (Jan. 2012)
8. [Swim Lane diagram – source article](#)
9. [Zachman Framework for Business Architecture](#)

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

1. Infolaw article – [Quality Documentation: Your Best Defense](#)
2. [Intro to Medical Terminology](#) (Note – lots of good introductory resources)
3. Medical Terminology Quizzes – [example](#)
4. Medical Dictionary – [Merck Manual](#), [UHN](#)

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

1. [Accreditation Canada](#)
2. [ISMP](#)
3. [UMLS](#) – Unified Medical Language – [webinar series](#)
4. [SNOMED-CT](#)
5. [HL7 – FHIR](#)
6. [LOINC](#)
7. [CPT](#)
8. Canadian standards – [Canada Health Infoway](#)
 - a. [PrescribeIT](#)
 - b. [Canadian Clinical Drug Data Set](#)
 - c. [pCLOCD](#) (Canadian subset of LOINC)
 - d. [Nursing Data Standards](#) (more information on ICNP, interRAI, and C-HOBIC)

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

1. PROSCI Change Management –[Introductory Blog](#)
2. Characteristics of successful changes in health care organizations: an interview study with physicians, registered nurses and assistant nurses – [Research Article](#)
3. Pan-Canadian Change Management, Canada Health Infoway, <https://www.infoway-inforoute.ca/en/component/edocman/resources/tools/4037-a-framework-and-toolkit-for-managing-ehealth-change?Itemid=103>

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

1. Research Articles
 - a. Overview of Smartphone Apps - <https://canjhealthtechnol.ca/index.php/cjht/article/view/eh0098/538>
 - b. mHealth & Mobile Medical Apps: A Framework to Assess Risk and Promote Safer Use (full article available) - https://www.researchgate.net/publication/265734474_mHealth_and_Mobile_Medical_Apps_A_Framework_to_Assess_Risk_and_Promote_Safer_Use
 - c. Assessment of Mobile Health Apps Using Built-In Smartphone Sensors for Diagnosis and Treatment: Systematic Survey of Apps Listed in International Curated Health App Libraries - <https://mhealth.jmir.org/2020/2/e16741>
2. Regulatory Guidance
 - a. [Health Canada](#)
 - b. [Food & Drug Administration](#)

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

- Digital Health Canada eSafety Guide (Cost associated)
- Research Articles
 - Current Challenges in Health Information Technology-related Patient Safety
 - The impact of health information technology on patient safety
 - HHS Cybersecurity Program Presentation – EMR Records in Health Care (2022)
 - Cyberattacks on Canadian health information systems
 - Humber River restores computers after malware attack | Canadian Healthcare Technology
- Canadian Vigilance Adverse Reaction database
- Medication errors with relation to electronic health records –
 - <https://attheu.utah.edu/facultystaff/electronic-health-records-fail-to-detect-up-to-33-of-medication-errors/>
 - <https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2766834>
 - <https://www.cjhp-online.ca/index.php/cjhp/article/view/3223>

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)

1. Research articles

- a. Closed-Loop Medication Management with an Electronic Health Record System in U.S. and Finnish Hospitals (Note - includes diagram used in presentation)
- b. Impact of Implementing Electronic Health Records on Medication Safety at an HIMSS Stage 6 Hospital: The Pharmacist's Perspective
- c. AHRQ Primer- Electronic Health Records
- d. Joint Commission Safe Use of Health Information Technology (Note - older reference from 2015)
- e. NIH - Clinical Decision Support Systems

2. System Usability

- a. Poor system usability
- b. Increased provider burnout
- c. Increased physician burnout