



NURSING INFORMATICS INVENTORY

EXISTING TEACHING AND
LEARNING RESOURCES



Canada Health
Infoway Inforoute
Santé du Canada



Canadian Association
of Schools of Nursing

Association canadienne des
écoles de sciences infirmières

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INTRODUCTION

The purpose of this Nursing Informatics Inventory is to increase the capacity of Canadian nurse educators to teach nursing informatics at the undergraduate level. This resource is meant to accompany the *Nursing Informatics Entry-to-Practice Competencies for Registered Nurses*. The Inventory of Resources is not meant to be prescriptive nor presumed to be all inclusive of teaching and learning resources related to the use of health information and communication technologies.

BACKGROUND

The Canadian Association of Schools of Nursing (CASN) has actively deliberated the transformation of healthcare delivery through information technology in recent years. In 2011 CASN launched a project, *Generating Momentum to Prepare Nursing Graduates for the Electronic World of Health Care Delivery*, funded by Canada Health Infoway. This project focused on educating future nurses on the use of information structures, processes and technology to provide safe and effective patient care. One component of this project dealt with developing the capacity of Canadian nurse educators' to teach nursing informatics.

METHODOLOGY

CASN and the project's Resources Working Group (RWG) of faculty members and other key stakeholders, has guided the implementation of an environmental scan on faculty development resources in the area of nursing informatics (NI). The outcome of the scan is an inventory of Canadian and international faculty development NI resources, and in particular, those providing guidance on how to integrate NI skills and competencies into curricula and practice.

This report presents an inventory of NI resources that has been developed based on:

- A Glossary of NI Terms (see next page);
- A literature review of Canadian and International professional development resources;
- Survey results from CASN members, Clinical Nurse Educators in practice settings and students involved with the Canadian Nursing Students Association (CNSA); and,
- The feedback from attendees of the CASN-Infoway National Stakeholder Symposium on November 30, 2011.

STRUCTURE OF INVENTORY

Part 1: A Glossary of NI Terms

The Resources Working Group (RWG) and the Project Task Force confirmed a number of terms and definitions for use during the environmental scan.

Part 2: Nursing Informatics Competencies & Resources

The inventory resources are categorized according to each of the three *Nursing Informatics Entry-To-Practice Competencies for Registered Nurses* (CASN, 2012).

- A. Uses relevant information and knowledge to support the delivery of evidence-informed patient/client care.**
- B. Uses ICTs in accordance with professional and regulatory standards and workplace policies.**
- C. Uses information and communication technologies in the delivery of patient/client care.**

Part 3: Quick Guide to Resources

This section lists the full inventory of resources alphabetically, and then classifies the three competencies by each resource. This will assist readers in quickly identifying those resources that include more than one competency.

Part 4: Supplementary Resources

Within this section, a list of resources is suggested that will provide general awareness and understanding about information and communication technology as it relates to the delivery of healthcare services.

Marian Pitters, EdD
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PART 1

GLOSSARY OF NURSING INFORMATICS TERMS

The Resources Working Group (RWG) and the Project Task Force confirmed a number of terms and definitions for use during the environmental scan.

Nursing informatics:

- A science and practice [which] integrates nursing, its information and knowledge, and their management, with information and communication technologies to promote the health of people, families and communities worldwide (IMIA, 2009).

NI teaching and learning resources:

- Resources that faculty can use to increase their understanding of and their capacity to teach nursing informatics across the undergraduate curriculum.

Nursing informatics faculty development:

- Capacity building that addresses the professional development needs of faculty members who teach curriculum content related to nursing informatics.

PART 2

INVENTORY OF CANADIAN AND INTERNATIONAL FACULTY DEVELOPMENT NI RESOURCES BY COMPETENCY

Competency A: Uses relevant information and knowledge to support the delivery of evidence-informed patient/client care.

Title	Author	Type of Resource	Source and Description
NurseOne Portal	Canadian Nurses Association (CNA)	<ul style="list-style-type: none"> • Website • Social media • E-Learning Modules • E-books/library • Webliographies • Community of practice • Knowledge feature (coming soon) 	<p>http://www.nurseone.ca/</p> <p>Specific recommendations:</p> <p>Selected webliographies found in the library: developed especially for nurses in Canada by NurseONE Manager.</p> <p>Current topics include - November 2009: Nursing Informatics; June 2010: Information Communication Technologies; September 2010: Technology in the Classroom</p> <p>To access webliographies</p> <ol style="list-style-type: none"> Log in to NurseONE. Click on the Library tab. Click on the webliographies button. <p>Informatics Community of Practice (CoP). A NurseONE journal Club for informatics nurses in 2 provinces (NB and NS). Plans to go national, but no date has been set. Other nursing groups can request to host a Community of Practice on NurseONE.</p> <p>A new Knowledge Feature on Nursing Informatics is scheduled to be posted on NurseONE in September 2012 (a selection of varied resources presented by experts).</p> <p>http://www.nurseone.ca/Default.aspx?portlet=StaticHtmlViewerPortlet&plang=1&ptdi=299</p> <ul style="list-style-type: none"> - on the NurseONE homepage, click 'knowledge features' on the top tool bar

Title	Author	Type of Resource	Source and Description
COACH (Canadian Organization for the Advancement of Computers in Health): Canada's Health Informatics Association	Canadian Organization for the Advancement of Computer in Health (COACH)	<ul style="list-style-type: none"> Website Teaching tool Journal Forum Social media 	<p>www.coachorg.com</p> <p>Member recommendation that all Schools of Nursing take advantage of Coach's Academic Institutional Membership (AIM) resource as it offers a wide variety of benefits for members. Many tools can be adapted for NI.</p> <p>Health Informatics Training System (HITS): Tool for use by healthcare users everywhere as they seek to learn basic concepts and terminology in the use of computers in healthcare.</p> <p>Direct link recommended: http://coachorg.com/en/careerdevelopment/healthinformaticstrainingsystemhits.asp - Google search "COACH health informatics training system"</p> <p>Additionally, COACH hosts the Canadian Telehealth Forum (CTF). The CTF brings together the many stakeholders involved and interested in furthering the development and implementation of telehealth practices</p> <p>Direct link recommended: http://coachorg.com/en/ctf.asp</p>
Health care informatics: An interdisciplinary approach.	Englehardt, S.P. & Nelson, R. (Eds)	<ul style="list-style-type: none"> Textbook 	<p>2002. St. Louis, MO: Mosby.</p> <p>This textbook focuses on topics in informatics relevant to all fields of healthcare, complete with chapter outlines, objectives, key terms, and discussion questions. A unique online supplement complements the book to offer complete, electronic support for both instructors and students. This text discusses trends and innovative strategies from a contemporary, mainstream perspective. (adapted from publisher's description)</p>
Canada Health Infoway	Infoway	<ul style="list-style-type: none"> Website Social media Resources Forums Events/ Conferences Online courses (Standards 	<p>https://www.infoway-inforoute.ca/</p> <p><i>Infoway</i> is an independent not-for-profit corporation created by Canada's First Ministers in 2001 to foster and accelerate the development and adoption of electronic health record (EHR) systems with compatible standards and communications technologies. Funded by the Government of Canada, <i>Infoway</i> works with the country's ten provinces and three territories to implement private, secure EHR systems, enabling best practices and successful projects in one region to be shared or</p>

Title	Author	Type of Resource	Source and Description
		Collaborative)	<p>replicated in other regions.</p> <p>Direct link recommended: https://www.infoway-inforoute.ca/index.php/progress-in-canada/clinician-peer-support-networks <ul style="list-style-type: none"> - Google search "Canada Health Infoway, clinician support network" </p> <p>Peer-to-peer programs to support physicians, nurses, and pharmacists within the practice setting.</p>
Health Informatics and Nursing in Canada	Hannah, K.	• Article	<p>http://www.healthcareimc.com/bcovers/previous/Vol_XIX_No_3/pdfs/Vol_XIX_No_3_7.pdf</p> <ul style="list-style-type: none"> - Google search "health informatics, Hannah, 2005" <p>This article discusses how relevant nursing components must be included in a national health information system in Canada. September, 2005.</p>
Introduction to Nursing Informatics	Hannah, K. J., Ball, M. J. & Edwards, M.J.A.(Eds.)	• Textbook	<p>Springer Publishing. 2006. ISBN:038726096X</p> <p>A primer for those new to nursing informatics. It provides a thorough introduction to basic terms and concepts, as well as an in-depth exploration of the most prevalent applications in nursing practice, education, administration, and research.</p>
Handbook of informatics for nurses & healthcare professionals	Hebda, T., Czar, P. & Mascara, C.	• Handbook	<p>2005 (3rd edition ed.). NJ: Prentice Hall.</p> <p>A guide to healthcare computer technology, with information on intranets, regulations, legislation, trends, and other topics. Includes examples and case studies in each chapter, as well as an introduction to the characteristics and benefits of the use of Computerized Patient Records (description from the publisher)</p>
The Nursing Informatics Implementation Guide	Callahan Hunt, E., Breckenridge Sproat, S. & Rutherford Kitzmiller, R.	• Textbook	<p>Springer, 2004. ISBN 978-0-387-40837-8</p> <p>A practical guide for nurses and healthcare professionals regarding the implementation processes of both small and large clinical computer systems used in various healthcare settings.</p>
Kwantlen BSN Integrated Nursing Informatics	Kaminski, J. (developed	<ul style="list-style-type: none"> • Website • Teaching tool 	<p>http://nursing-informatics.com/kwantlen/index.html</p>

Title	Author	Type of Resource	Source and Description
Curriculum	by)	<ul style="list-style-type: none"> Course outline Learning Centre Self-assessment tool Listserve 	Nursing Informatics Integration for the BSN in Nursing Program at Kwantlen Polytechnic University Design & Content by © June Kaminski, RN MSN PhD(c) - 1999 - 2011
Integrating technology in nursing education: Tools for the knowledge era	Mastrian, K. G., McGonigle, D., Mahan, W. L., & Bixler, B.	<ul style="list-style-type: none"> Textbook Teaching tool 	<p>Full reference to obtain a hard copy: Mastrian, K. G., McGonigle, D., Mahan, W. L., & Bixler, B. (2011). Integrating technology in nursing education: Tools for the knowledge era. Sudbury, MA: Jones and Bartlett.</p> <p>Provides valuable, easy-to-use strategies on incorporating technology into the classroom; examines the increased role of technology in healthcare and its transformational impact on that field, allowing nurses to understand current and future trends and thus, integrate technology into nursing education in order to effectively prepare students for a new, technologically-driven healthcare environment. Also featured are topics on learning theories, the instructional design process, changes in higher education, and variations in learning environments. Using case studies, critical-thinking exercises, weblinks, and more, the text challenges nurses to think critically and formulate compelling teaching strategies. (adapted from publisher's description)</p>
Research & Clinical Resources for Evidence Based Nursing: Nursing Informatics	McGill University Health Centre	<ul style="list-style-type: none"> Website 	<p>http://muhc-ebn.mcgill.ca/nursing_informatics.htm</p> <p>Provides a list of resources on nursing informatics including organizations, handbooks, newsletters, journals and articles.</p>
Nursing Informatics: Foundation of Knowledge	McGonigle, D. & Mastrian, K.	<ul style="list-style-type: none"> Textbook 	<p>Jones & Bartlett Publishers; 1 edition (July 31, 2008)</p> <p>Covers the history of healthcare informatics, current issues, basic informatics concepts, and health information management applications; comprehensive introductory chapters that explain the core sciences of nursing informatics; explains how nursing informatics relates to knowledge acquisition, knowledge processing, knowledge generation, knowledge dissemination and feedback, all of which build the science of nursing.</p>

Title	Author	Type of Resource	Source and Description
Nursing Research: Generating and Assessing Evidence for Nursing Practice	Polit, D.	<ul style="list-style-type: none"> Textbook 	Resource for nurses to support them to be able to conduct or read research as part of evidence-based practice.
CHIRAD - Centre for Health Informatics Research and Development (UK)	University of Winchester and Walter Sisulu University in Mthatha, South Africa	<ul style="list-style-type: none"> Website, portal Social media 	http://www.chirad.org/ Provides an environment for the development of Health Informatics as an academic subject. CHIRAD is a company that is a non-for-profit organization and a virtual R&D centre for Health Informatics.
AMIA 10x10 University of Minnesota	Westra, B.	<ul style="list-style-type: none"> Website Distance Learning Course Social media 	http://www.amia.org/education/academic-and-training-programs/10x10-university-minnesota-school-nursing - Google search "AMIA 10x10 Minnesota" AMIA aims to lead the way in transforming healthcare through trusted science, education, and the practice of informatics. AMIA connects a broad community of professionals and students interested in informatics. AMIA is the bridge for knowledge and collaboration across a continuum, from basic and applied research to the consumer and public health arenas. AMIA actively supports five domains: translational bioinformatics, clinical research informatics, clinical informatics, consumer health informatics, and public health informatics
ANIA-CARING (formerly the <i>American Nursing Informatics Association and the Capital Area Roundtable on Informatics in Nursing</i>)	NA	<ul style="list-style-type: none"> Website Newsletters Conferences 	http://www.ania-caring.org Provides education, networking, and information resources that enrich and strengthen the roles in the field of nursing informatics.
Canadian Institute for Health Information (CIHI)	NA	<ul style="list-style-type: none"> Website 	http://www.cihi.ca/CIHI-ext-portal/internet/EN/Home/home/cihi000001 A robust resource that shows students the benefits of building the infrastructure so that data can be captured at the point of care (as a by-product of care), and reused for multiple purposes.
Canadian Journal of Nursing Informatics	NA	<ul style="list-style-type: none"> Journal Website 	http://cjni.net/journal/ An on-line publication focused on the evolving field of Canadian nursing informatics; a dynamic vehicle to express the voice for Nursing

Title	Author	Type of Resource	Source and Description
			Informatics that is championed and lived by many nurses in Canada and around the globe; useful columns that focus on new ideas and breakthroughs in informatics in practice, education, research and administration; various reviews of pertinent informatics books, software, web sites, nursing information systems, multimedia and other resources; academic, research, and practice related papers, presentations, and detailed abstracts that present new work done in the informatics field; opinion pieces, essays, and news announcements.
Canadian Nursing Informatics Association	NA	<ul style="list-style-type: none"> • Journal • Website • Resource provided by peers • Newsletter • Conference • Associate group of CNA • Social media • Journal club • Virtual events • Education initiatives • Scholarship • Forum in English or French • Reports 	http://cnia.ca Direct link recommended: http://cnia.ca/education_links.htm The voice for Nursing Informatics in Canada. Recognizing the importance of the work the CNIA is undertaking, the Canadian Nurses Association has granted emerging group status to the CNIA. The CNIA is also affiliated with COACH, Canada's National Health Informatics Association.
Canadian Nurses Association	NA	<ul style="list-style-type: none"> • Website • Social media 	http://www.cna-aiic.ca/ Specific link to nursing informatics: http://www2.cna-aiic.ca/CNA/documents/pdf/publications/NursingInformaticsSept_2001_e.pdf - Google search "CNA nursing informatics, issues and trends"
Nursing Informatics Learning Centre	NA	<ul style="list-style-type: none"> • Website • On-line courses 	http://nursing-informatics.com/courses

Title	Author	Type of Resource	Source and Description
			Provides professional development NI courses within the categories of Nursing Practice, Education, Administration and Theory; approved by the California Board of Nursing for CE credit. Some courses are short, fit to complete in an afternoon. Others are more personalized and self-paced - all are taken entirely on-line in the privacy of your office.
HiMSS: Healthcare Information and Management Systems Society (US)	NA	<ul style="list-style-type: none"> Website Social media 	http://www.himss.org/ASP/index.asp A cause-based, not-for-profit organization focused on providing global leadership for the optimal use of information technology (IT) and management systems for the betterment of healthcare.
International Classification for Nursing Practice®	NA	<ul style="list-style-type: none"> Website Forum 	http://icnp.clinicaltemplates.org/ A unified nursing language system. It is a compositional terminology for nursing practice that facilitates the development of and the cross-mapping among local terms and existing terminologies Direct link recommended: http://www.icn.ch/pillarsprograms/international-classification-for-nursing-practice-icnpr/ - Google search “international classification for nursing practice” Other info: The ICNP has been cross-mapped to C-HOBIC. This is a useful tool to show undergraduates and graduate students how nursing can be captured in clinical information systems to ensure re-use of data and comparability of nursing sensitive indicators.
International Congress on Nursing Informatics	NA	<ul style="list-style-type: none"> Conference website Social media 	http://www.ni2012.org/ The NI series of conferences is the leading gathering in the world for nurses interested in the use of informatics and health information technology. NI 2012 was held in June in Montreal, Quebec, Canada.
International Medical Informatics Association, Nursing Informatics Special Interest Group (IMIA NI SIG)	NA	<ul style="list-style-type: none"> Website Social media 	http://www.imiani.org/index.php?option=com_frontpage&Itemid=1 Promotes the use of technology to provide even better conditions and quality of the healthcare delivered. A collaborative forum to share experiences and disseminate accomplishments.
Manitoba Nursing Informatics Association	NA	<ul style="list-style-type: none"> Website 	http://www.mnia.ca/ Provides leadership in informatics, educational opportunities and a

Title	Author	Type of Resource	Source and Description
			networking forum for its members.
Nova Scotia Nursing Informatics Groups	NA	<ul style="list-style-type: none"> Website Chat room 	http://www.nsnig.ca/ Promotes and develops the advancement of nursing informatics in Nova Scotia.
On-line Journal of Nursing Informatics	NA	<ul style="list-style-type: none"> Journal Website Social media 	http://ojni.org Includes peer-reviewed, original, high quality scientific papers, reviews of articles, practice-based articles, and databases related to nursing informatics.
Ontario Nursing Informatics Group	NA	<ul style="list-style-type: none"> Website Forums Events Conferences Newsletter Social media 	http://onig.on.ca/ ONIG was formed in 1980 and achieved RNAO status as an affiliate group in 1991. It provides a forum for nursing professionals to communicate and disseminate current developments in healthcare information systems.
RNAO	NA	<ul style="list-style-type: none"> Website e-learning Social media BPGs for Personal Digital Assistance (PDA) On-line videos Fact sheets Resource kits Newsletters Brochures Flyers 	http://rnao.ca/ The Registered Nurses' Association of Ontario (RNAO) is the professional association representing registered nurses in Ontario. RNAO continues to be funded by the Ontario Ministry of Health and Long Term Care (MOHLTC) and eHealth Ontario to implement the Nursing and eHealth Project. The purpose of the initiative is to facilitate the nursing profession's involvement in the Ontario eHealth agenda and support nurses to take a leadership role in the adoption of communication and information systems in all healthcare settings. Direct links recommended: http://elearning.rnao.ca/ www.rnao.org/ehealthresources http://www.rnao.org/eHealth_Etiquette www.rnao.org/ehealth www.rnao.org/Faculty_Resource www.ehealthtoolkit.rnao.ca http://www.rnao.ca/eHealth_course http://www.rnao.org/PDA_Fact_Sheet - Google search "RNAO, nurses, use of computer technology"

Title	Author	Type of Resource	Source and Description
			(second link)
Essentials of Nursing Informatics	Saba, V. & McCormick, K.	<ul style="list-style-type: none"> Textbook 	<p>2011. New York, NY McGraw-Hill; 5 edition</p> <p>Explores the ever-growing role technology plays in the field of nursing. Offering theoretical background on how informatics serves many aspects of the profession, with practical help in unlocking computing's benefits -- both now and into the future. Numerous case studies and examples add real-world relevance to the material.</p>
Nursing and Informatics for the 21st Century: An International Look at Practice, Education and EHR Trends, 2nd edition	Weaver, C., Delaney, C., Weber, P., & Carr, R. (Eds)	<ul style="list-style-type: none"> Textbook 	<p>2010. Healthcare Information and Management Systems Society (HIMSS) and American Medical Informatics Association. Chicago, IL: HIMSS.</p> <p>Examines the revolution that has occurred in nursing in the past four years and explores the role information technology is playing in this transformation, with a thoughtful examination of nursing practice, science and research, and education across the globe.</p>
Computers Informatics Nursing (CIN)	Nicoll, L.	<ul style="list-style-type: none"> Journal Social media 	<p>http://journals.lww.com/cinjjournal/</p> <p>Is at the interface of the science of information and the art of nursing, publishing articles on the latest developments in nursing informatics, research, and educational technology.</p>
Nursing Education Perspectives	National League for Nursing	<ul style="list-style-type: none"> Journal 	<p>http://www.nln.org/nlnjournal/</p> <p>Peer-reviewed, bimonthly journal that provides an evidence base for best practices and a forum for the exchange of information regarding teaching and learning, curricula, technology, the recruitment and retention of students, and other issues important to nursing education.</p>
SIM Chart	ELSEVIER	<ul style="list-style-type: none"> Teaching tool 	<p>http://www.elsevier.ca/</p> <p>A web-based simulated electronic health record (EHR) system that was specifically developed as a teaching tool for health science education. It combines practical, real-world experience in electronic documentation, with powerful, fully integrated educator support to help incorporate EHR practice into the curriculum.</p>
Nurse Central Videos	NA	<ul style="list-style-type: none"> Teaching tool 	<p>http://www.youtube.com/user/NurseCentral/featured</p> <p>A one stop shop for everything nursing school and nursing profession</p>

Title	Author	Type of Resource	Source and Description
			related
Health IT Workforce Development Curriculum Components	NA	<ul style="list-style-type: none"> Curriculum 	<p>Teams created twenty 3-credit “courses” that are now open to the public and free for all to use. The goal is to be able to distribute these curricular materials around the globe to scale-up workforce for increasingly digitized world of health and healthcare.</p> <p>The curriculum materials are now available to the public on the NTDC website at http://www.onc-ntdc.org or http://www.onc-ntdc.info</p>
Docu-Care	iCare & Lippincott Williams and Wilkins	<ul style="list-style-type: none"> Teaching tools 	<p>http://www.icareacademic.com</p> <p>A set of learning tools built by educators for educators that teaches students to critically think about what they are seeing and inputting in an EHR.</p>
College of Nurses of Ontario	NA	<ul style="list-style-type: none"> Website Learning modules 	<p>http://www.cno.org</p> <p>The governing body for registered nurses (RNs), registered practical nurses (RPNs) and nurse practitioners (NPs) in Ontario, Canada.</p> <p>Direct link recommended: http://www.cno.org/en/learn-about-standards-guidelines/</p>
Canadian Health Outcomes for Better Information and Care Project (C-HOBIC)	NA	<ul style="list-style-type: none"> Tool kit 	<p>http://www.cna-aiic.ca/c-hobic/toolkit/default_e.aspx - Google search “C-HOBIC tool kit”</p> <p>A systematic, structured language to admission and discharge assessments of patients receiving acute care, complex continuing care, long-term care or home care. This language can be abstracted into provincial databases or EHRs; builds on the Ontario HOBIC program; implemented in Saskatchewan and Manitoba in 2011.</p>
National Institutes of Health Informatics	NA	<ul style="list-style-type: none"> Website Seminars Events Video archive 	<p>http://www.nihi.ca/</p> <p>Canada's first national organization dedicated to fostering HI innovation, research and education. NIHI is a virtual, self-sustaining institute of institutes.</p> <p>Hosts a National Community of Scholars (NaCOS) that enables people in academia, industry, government, and healthcare organizations to browse and search for people with Health Informatics expertise in Canada. It allows searches by keywords so experts and their work can</p>

Title	Author	Type of Resource	Source and Description
			be located quickly.
Innovations in Nursing Informatics: Clinical experience is foundational to a successful career in informatics.	Lewis, A.	<ul style="list-style-type: none"> Article 	<p>Advance for Long-term Care Management. Posted on: January 9, 2012. Retrieved on January 16, 2012 at: http://long-term-care.advanceweb.com/Features/Articles/Innovations-in-Nursing-Informatics.aspx</p> <ul style="list-style-type: none"> Google search “innovations in nursing informatics” <p>Discusses how to launch into NI within a nursing career and then obtain board certification in nursing informatics.</p>
Informatics and Nursing: Competencies and Application	Thede, L.Q. & Sewell, J.	<ul style="list-style-type: none"> Textbook Website 	<p>Lippincott Williams & Wilkins; 3 edition (April 1 2009)</p> <p>Information to supplement the textbook can be found at: http://dlthede.net/Informatics/Informatics.html</p> <p>Thoroughly updated to reflect current technologies; reviews the concepts and applications of nursing informatics. Starting with an introduction to nursing informatics, the contents proceed from computer basics to skills and techniques for using the end product of informatics: data. Other units review the effects that the Internet is having on healthcare, the ins and outs of using personal productivity software, and informatics in the clinical area. (adapted from publisher's description)</p>

Competency B: Uses ICTs in accordance with professional and regulatory standards and workplace policies.

Title	Author	Type of Resource	Source and Description
NurseOne Portal	Canadian Nurses Association (CNA)	<ul style="list-style-type: none"> • Website • Social media • E-Learning Modules • E-books/library • Webliographies • Community of practice • Knowledge feature (coming soon) 	<p>http://www.nurseone.ca/</p> <p>Specific recommendations:</p> <p>Selected webliographies found in the library: developed especially for nurses in Canada by NurseONE Manager. Current topics include - November 2009: Nursing Informatics; June 2010: Information Communication Technologies; September 2010: Technology in the Classroom</p> <p>To access webliographies</p> <ol style="list-style-type: none"> a. Log in to NurseONE. b. Click on the Library tab. c. Click on the webliographies button. <p>Informatics Community of Practice (CoP). A NurseONE journal Club for informatics nurses in 2 provinces (NB and NS). Plans to go national, but no date has been set. Other nursing groups can request to host a Community of Practice on NurseONE.</p> <p>A new Knowledge Feature on Nursing Informatics is scheduled to be posted on NurseONE in September 2012 (a selection of varied resources presented by experts). http://www.nurseone.ca/Default.aspx?portlet=StaticHtmlViewerPortlet&plang=1&ptdi=299</p> <ul style="list-style-type: none"> - on the NurseONE homepage, click 'knowledge features' on the top tool bar
COACH (Canadian Organization for the Advancement of Computers in Health): Canada's Health Informatics Association	COACH	<ul style="list-style-type: none"> • Website • Teaching tool • Journal • Forum • Social media 	<p>www.coachorg.com</p> <p>Member recommendation that all Schools of Nursing take advantage of Coach's Academic Institutional Membership (AIM) resource as it offers a wide variety of benefits for members. Many tools can be adapted for NI.</p>

Title	Author	Type of Resource	Source and Description
			<p>Health Informatics Training System (HITS): Tool for use by healthcare users everywhere as they seek to learn basic concepts and terminology in the use of computers in healthcare.</p> <p>Direct link recommended: http://coachorg.com/en/careerdevelopment/healthinformaticstrainingsystemhits.asp - Google search "COACH health informatics training system"</p> <p>Additionally, COACH hosts the Canadian Telehealth Forum (CTF). The CTF brings together the many stakeholders involved and interested in furthering the development and implementation of telehealth practices</p> <p>Direct link recommended: http://coachorg.com/en/ctf.asp</p>
Faculty development initiatives for the integration of informatics competencies and point-of-care technologies in undergraduate nursing education.	Curran, C. R.	<ul style="list-style-type: none"> Journal article 	<p>Nursing Clinics of North America. 2008. 43(4), 523-33.</p> <p>http://www.nursing.theclinics.com/article/S0029-6465(08)00058-3/abstract (subscription required) - Google search "faculty development, Curran 2008"</p> <p>This article describes a successful faculty development program that was aimed at upgrading the technology and informatics skills of the faculty while at the same time developing and threading informatics skills across the baccalaureate nursing curriculum.</p>
Health care informatics: An interdisciplinary approach.	Englehardt, S.P. & Nelson, R. (Eds)	<ul style="list-style-type: none"> Textbook 	<p>2002. St. Louis, MO: Mosby.</p> <p>This textbook focuses on topics in informatics relevant to all fields of healthcare, complete with chapter outlines, objectives, key terms, and discussion questions. A unique online supplement complements the book to offer complete, electronic support for both instructors and students. This text discusses trends and innovative strategies from a contemporary, mainstream perspective. (adapted from publisher's description)</p>
Improving information technology competencies: Implications for psychiatric mental health nursing.	Fetter, M.S.	<ul style="list-style-type: none"> Journal article 	<p>Issues in Mental Health Nursing. 2009 Jan; 30 (1), 3-13</p> <p>http://informahealthcare.com/doi/abs/10.1080/01612840802555208 (subscription required) - Google search "technology competencies, implications, fetter,</p>

Title	Author	Type of Resource	Source and Description
			<p>2009"</p> <p>This report updates psychiatric-mental health nurses on the IT competencies literature, recent enhancement initiatives and innovations, and their implications for the specialty. It addresses a concern that many nurses may not possess IT capabilities and that nurse educators are not prepared to teach them. IT competency evaluations indicate novice skill levels for most faculty and students.</p>
Curriculum strategies to improve baccalaureate nursing information technology outcomes.	Fetter, M. S.	<ul style="list-style-type: none"> Journal article 	<p>The Journal of Nursing Education. 2009, 48(2), 78-85.</p> <p>http://www.healio.com/nursing/journals/JNE/%7B7205258D-6162-4732-BD0F-6EED25926F5D%7D/Curriculum-Strategies-to-Improve-Baccalaureate-Nursing-Information-Technology-Outcomes (subscription required)</p> <ul style="list-style-type: none"> Google search "curriculum strategies, fetter, 2009" <p>The Technology Informatics Guiding Education Reform (TIGER) Initiative, a coalition aiming to advance IT outcomes in nursing education, has cited benchmarking and sharing best practices as key to achieving its goals. Thus, this article reports on the process, results, and implications of a project using curriculum strategies to enhance IT outcomes. A 3-year action plan directed faculty, student, and agency evaluation, curriculum mapping, model learning module, and documentation development.</p>
Graduating nurses' self-evaluation of information technology competencies.	Fetter, M.S.	<ul style="list-style-type: none"> Journal article 	<p>Journal of Nursing Education. 2009 Feb; 48 (2), 86-90.</p> <p>http://www.healio.com/nursing/journals/JNE/%7B1B9742E0-E625-44FD-BD1F-D7D64BDCE8B9%7D/Graduating-Nurses-Self-Evaluation-of-Information-Technology-Competencies (subscription required)</p> <ul style="list-style-type: none"> Google search "graduating nurses' self-evaluation, fetter 2009" <p>Using a standardized instrument, graduating baccalaureate nurses were most confident in their Internet, word processing, and systems operations skills; they rated themselves lowest on care documentation and planning, valuing informatics knowledge, skills development, and data entry competencies. Exposure to the latest informatics systems was a priority. Students want fair access to informatics and technology-rich clinical settings; more realistic informatics and technology</p>

Title	Author	Type of Resource	Source and Description
			simulations; enthusiastic and capable faculty; and better hardware, software, and literature-searching support in agencies, classrooms, laboratories, and residences. Nursing programs, clinical agencies, and policy makers need to recognize that students are advancing beyond acquiring informatics skills to integrating health information literacy into practice.
Enhancing Baccalaureate Nursing Information Technology Outcomes: Faculty Perspectives.	Fetter, M.S.	<ul style="list-style-type: none"> Journal article 	<p>International Journal of Nursing Education Scholarship. 2008, 5(1), 1-15.</p> <p>http://www.degruyter.com/view/j/ijnes.2008.5.1/ijnes.2008.5.1.1440/ijnes.2008.5.1.1440.xml?format=INT (subscription required)</p> <ul style="list-style-type: none"> Google search “enhancing baccalaureate nursing, fetter 2008” <p>Faculty members were surveyed regarding barriers and strategies for improving information technology outcomes. Project findings have educational, clinical agency, legal, and policy implications.</p>
Integrating information literacy across a BSN curriculum.	Flood, L. S., Gasiewicz, N., & Delpier, T.	<ul style="list-style-type: none"> Journal article 	<p>Journal of Nursing Education. 2010 Feb., 49(2), 101-104</p> <p>http://www.healio.com/nursing/journals/JNE/%7B61244979-37C3-48FD-8A93-7FE6DE846E76%7D/Integrating-Information-Literacy-Across-a-BSN-Curriculum (subscription required)</p> <ul style="list-style-type: none"> Google search “literacy across a BSN curriculum” <p>This article offers a systematic approach to incorporating information literacy, a vital component of informatics, across a baccalaureate of science in nursing curriculum.</p>
Health Informatics and Nursing in Canada	Hannah, K.	<ul style="list-style-type: none"> Article 	<p>http://www.healthcareimc.com/bcovers/previous/Vol_XIX_No_3/pdfs/Vol_XIX_No_3_7.pdf</p> <ul style="list-style-type: none"> Google search “health informatics, Hannah, 2005” <p>This article discusses how relevant nursing components must be included in a national health information system in Canada. September, 2005.</p>
Introduction to Nursing Informatics	Hannah, K. J., Ball, M. J. & Edwards, M.J.A. (Eds.)	<ul style="list-style-type: none"> Textbook 	<p>Springer Publishing. 2006. ISBN:038726096X</p> <p>A primer for those new to nursing informatics. It provides a thorough introduction to basic terms and concepts, as well as an in-depth exploration of the most prevalent applications in nursing practice, education, administration, and research.</p>

Title	Author	Type of Resource	Source and Description
Handbook of informatics for nurses & healthcare professionals	Hebda, T., Czar, P., & Mascara, C.	<ul style="list-style-type: none"> Handbook 	<p>2005 (3rd edition ed.). NJ: Prentice Hall.</p> <p>A guide to healthcare computer technology, with information on intranets, regulations, legislation, trends, and other topics. Includes examples and case studies in each chapter, as well as an introduction to the characteristics and benefits of the use of Computerized Patient Records (description from the publisher)</p>
The Nursing Informatics Implementation Guide	Callahan Hunt, E., Breckenridge Sproat, S. & Rutherford Kitzmiller, R.	<ul style="list-style-type: none"> Textbook 	<p>Springer, 2004. ISBN 978-0-387-40837-8</p> <p>A practical guide for nurses and healthcare professionals regarding the implementation processes of both small and large clinical computer systems used in various healthcare settings.</p>
Integrating technology in nursing education: Tools for the knowledge era	Mastrian, K. G., McGonigle, D., Mahan, W. L., & Bixler, B.	<ul style="list-style-type: none"> Textbook Teaching tool 	<p>Full reference to obtain a hard copy: Mastrian, K. G., McGonigle, D., Mahan, W. L., & Bixler, B. (2011). Integrating technology in nursing education: Tools for the knowledge era. Sudbury, MA: Jones and Bartlett.</p> <p>Provides valuable, easy-to-use strategies on incorporating technology into the classroom; examines the increased role of technology in healthcare and its transformational impact on that field, allowing nurses to understand current and future trends and thus, integrate technology into nursing education in order to effectively prepare students for a new, technologically-driven healthcare environment. Also featured are topics on learning theories, the instructional design process, changes in higher education, and variations in learning environments. Using case studies, critical-thinking exercises, weblinks, and more, the text challenges nurses to think critically and formulate compelling teaching strategies. (adapted from publisher's description)</p>
Research & clinical Resources for Evidence Based Nursing: Nursing Informatics	McGill University Health Centre	<ul style="list-style-type: none"> Website 	<p>http://muhc-ebn.mcgill.ca/nursing_informatics.htm</p> <p>Provides a list of resources on nursing informatics including organizations, handbooks, newsletters, journals and articles.</p>
Nursing Informatics: Foundation of Knowledge	McGonigle, D. & Mastrian, K.	<ul style="list-style-type: none"> Textbook 	<p>Jones & Bartlett Publishers; 1 edition (July 31, 2008)</p> <p>Covers the history of healthcare informatics, current issues, basic informatics concepts, and health information management applications; comprehensive introductory chapters that explain the core sciences of</p>

Title	Author	Type of Resource	Source and Description
			nursing informatics; explains how nursing informatics relates to knowledge acquisition, knowledge processing, knowledge generation, knowledge dissemination and feedback, all of which build the science of nursing. Other info: Best to teach NI in computer lab as interactive exercises.
Informatics in the Nursing Curriculum: A National Survey	Thompson, B. & Skiba, D.	<ul style="list-style-type: none"> Journal article 	<p>Nursing Education Perspectives. 2008. 29(5), 312-316.</p> <p>http://www.nlnjournal.org/doi/pdf/10.1043/1536-5026%282008%29029%5B0312%3AHFTN%5D2.0.CO%3B2</p> <p>Discusses major gaps in preparing nurses to use informatics tools to communicate with patients and healthcare professionals, manage knowledge, mitigate error, promote quality, and support clinical decision-making. The author calls for faculty and administrators to begin the dialogue that ensures nursing informatics requirements are integrated into their courses and curricula so future nurses have computer and information literacy knowledge and skills and can demonstrate informatics competencies.</p>
Canadian Journal of Nursing Informatics	NA	<ul style="list-style-type: none"> Journal Website 	<p>http://cjni.net/journal/</p> <p>An on-line publication focused on the evolving field of Canadian nursing informatics; a dynamic vehicle to express the voice for Nursing Informatics that is championed and lived by many nurses in Canada and around the globe; useful columns that focus on new ideas and breakthroughs in informatics in practice, education, research and administration; various reviews of pertinent informatics books, software, web sites, nursing information systems, multimedia and other resources; academic, research, and practice related papers, presentations, and detailed abstracts that present new work done in the informatics field; opinion pieces, essays, and news announcements.</p>
Canadian Nursing Informatics Association	NA	<ul style="list-style-type: none"> Journal Website Resource provided by peers Newsletter Conference Associate 	<p>http://cnia.ca Direct link recommended: http://cnia.ca/education_links.htm</p> <p>The voice for Nursing Informatics in Canada. Recognizing the importance of the work the CNIA is undertaking, the Canadian Nurses Association has granted emerging group status to the CNIA. The CNIA is also affiliated with COACH, Canada's National Health Informatics Association.</p>

Title	Author	Type of Resource	Source and Description
		<ul style="list-style-type: none"> group of CNA • Social media • Journal club • Virtual events • Education initiatives • Scholarship • Forum in English/ French • Reports 	
Canadian Nurses Association	NA	<ul style="list-style-type: none"> • Website • Social media 	http://www.cna-aiic.ca/ Specific link to nursing informatics: http://www2.cna-aiic.ca/CNA/documents/pdf/publications/NursingInformaticsSept_2001_e.pdf - Google search "CNA nursing informatics, issues and trends"
Nursing Informatics Learning Centre	NA	<ul style="list-style-type: none"> • Website • On-line courses 	http://nursing-informatics.com/courses Provides professional development NI courses within the categories of Nursing Practice, Education, Administration and Theory; approved by the California Board of Nursing for CE credit. Some courses are short, fit to complete in an afternoon. Others are more personalized and self-paced - all are taken entirely on-line in the privacy of your office.
International Congress on Nursing Informatics	NA	<ul style="list-style-type: none"> • Conference website • Social media 	http://www.ni2012.org/ The NI series of conferences is the leading gathering in the world for nurses interested in the use of informatics and health information technology. NI 2012 was held in June in Montreal, Quebec, Canada.
Nova Scotia Nursing Informatics Groups	NA	<ul style="list-style-type: none"> • Website • Chat room 	http://www.nsnig.ca/ Promotes and develops the advancement of Nursing Informatics in Nova Scotia.
On-line Journal of Nursing Informatics	NA	<ul style="list-style-type: none"> • Journal • Website • Social media 	http://ojni.org Includes peer-reviewed, original, high quality scientific papers, reviews of articles, practice-based articles, and databases related to nursing informatics.

Title	Author	Type of Resource	Source and Description
Ontario Nursing Informatics Group	NA	<ul style="list-style-type: none"> • Website • Forums • Events • Conferences • Newsletter • Social media 	http://onig.on.ca/ ONIG was formed in 1980 and achieved RNAO status as an affiliate group in 1991. It provides a forum for nursing professionals to communicate and disseminate current developments in healthcare information systems.
RNAO	NA	<ul style="list-style-type: none"> • Website • e-learning • Social media • BPGs for Personal Digital Assistance (PDA) • On-line videos • Fact sheets • Resource kits • Newsletters • Brochures • Flyers 	http://rnao.ca/ The Registered Nurses' Association of Ontario (RNAO) is the professional association representing registered nurses in Ontario. RNAO continues to be funded by the Ontario Ministry of Health and Long Term Care (MOHLTC) and eHealth Ontario to implement the Nursing and eHealth Project. The purpose of the initiative is to facilitate the nursing profession's involvement in the Ontario eHealth agenda and support nurses to take a leadership role in the adoption of communication and information systems in all healthcare settings. Direct links recommended: http://elearning.rnao.ca/ www.rnao.org/ehealthresources http://www.rnao.org/eHealth_Etiquette www.rnao.org/ehealth www.rnao.org/Faculty_Resource www.ehealthtoolkit.rnao.ca http://www.rnao.ca/eHealth_course http://www.rnao.org/PDA_Fact_Sheet - Google search "RNAO, nurses, use of computer technology" (second link)
Technology Informatics Guiding Education Reform (TIGER)	NA	<ul style="list-style-type: none"> • Website 	http://www.tigersummit.com Enables practicing nurses and nursing students to fully engage in the unfolding digital electronic era in healthcare.
Quality and Safety Education for Nurses (QSEN)	NA	<ul style="list-style-type: none"> • Website • Teaching tools • Learning 	http://www.qsen.org/ A comprehensive resource for quality and safety education for nurses. It

Title	Author	Type of Resource	Source and Description
		modules	is a place to learn and share ideas about educational strategies that promote quality and safety competency development in nursing. Includes annotated bibliographies, faculty-development learning modules, and teaching strategies submitted by faculty.
Essentials of Nursing Informatics	Saba, V. & McCormick, K.	• Textbook	2011. New York, NY McGraw-Hill; 5 edition Explores the ever-growing role technology plays in the field of nursing. Offering theoretical background on how informatics serves many aspects of the profession, with practical help in unlocking computing's benefits -- both now and into the future. Numerous case studies and examples add real-world relevance to the material.
Nursing and Informatics for the 21st Century: An International Look at Practice, Education and EHR Trends, 2nd edition	Weaver, C., Delaney, C., Weber, P., & Carr, R. (Eds)	• Textbook	2010. Healthcare Information and Management Systems Society (HIMSS) and American Medical Informatics Association. Chicago, IL: HIMSS. Examines the revolution that has occurred in nursing in the past four years and explores the role information technology is playing in this transformation, with a thoughtful examination of nursing practice, science and research, and education across the globe.
Computers Informatics Nursing (CIN)	Nicoll, L.	• Journal • Social media	http://journals.lww.com/cinjournal/ Is at the interface of the science of information and the art of nursing, publishing articles on the latest developments in nursing informatics, research, and educational technology.
Nursing Education Perspectives	National League for Nursing	• Journal	http://www.nln.org/nlnjournal/ Peer-reviewed, bimonthly journal that provides an evidence base for best practices and a forum for the exchange of information regarding teaching and learning, curricula, technology, the recruitment and retention of students, and other issues important to nursing education.
Health IT Workforce Development Curriculum Components	NA	• Curriculum	Teams created 20 three-credit "courses" that are now open to the public and free for all to use. The goal is to be able to distribute these curricular materials around the globe to scale-up workforce for increasingly digitized world of health and healthcare. The curriculum materials are now available to the public on the NTDC website at http://www.onc-ntdc.org or http://www.onc-ntdc.info

Title	Author	Type of Resource	Source and Description
A legal information sheet for nurses: Social Media	Canadian Nurses Protective Society (CNPS)	<ul style="list-style-type: none"> Information sheet 	<p>infoLAW Social Media (Vol. 19, No. 3, December 2010)</p> <p>http://www.cnps.ca/index.php?page=147</p> <ul style="list-style-type: none"> Google search "CNPS social media" <p>Discusses the risks and risk management involved with social media.</p>
College of Nurses of Ontario	NA	<ul style="list-style-type: none"> Website Learning modules 	<p>http://www.cno.org</p> <p>The governing body for registered nurses (RNs), registered practical nurses (RPNs) and nurse practitioners (NPs) in Ontario, Canada.</p> <p>Direct link recommended: http://www.cno.org/en/learn-about-standards-guidelines/</p>
National Institutes of Health Informatics	NA	<ul style="list-style-type: none"> Website Seminars Events Video archive 	<p>http://www.nihi.ca/</p> <p>Canada's first national organization dedicated to fostering HI innovation, research and education. NIHI is a virtual, self-sustaining institute of institutes.</p> <p>Hosts a National Community of Scholars (NaCOS) that enables people in academia, industry, government, and healthcare organizations to browse and search for people with Health Informatics expertise in Canada. It allows searches by keywords so experts and their work can be located quickly.</p>

Competency C: Uses information and communication technologies in the delivery of patient/client care.

Title	Author	Type of Resource	Source and Description
Telehealth Benefits and Adoption: Connecting People and Providers Across Canada	Canada Health Infoway	<ul style="list-style-type: none"> Report 	<p>May 30th 2011</p> <p>https://www.infoway-inforoute.ca/index.php/resources/reports</p> <p>A report documenting Telehealth's delivery of a number of access, quality and productivity benefits for clinicians, patients and the healthcare system.</p>
NurseOne Portal	Canadian Nurses Association (CNA)	<ul style="list-style-type: none"> Website Social media E-Learning Modules E-books/library Webliographies Community of practice Knowledge feature (coming soon) 	<p>http://www.nurseone.ca/</p> <p>Specific recommendations:</p> <p>Selected webliographies found in the library: developed especially for nurses in Canada by NurseONE Manager.</p> <p>Current topics include - November 2009: Nursing Informatics; June 2010: Information Communication Technologies; September 2010: Technology in the Classroom</p> <p>To access webliographies</p> <ol style="list-style-type: none"> Log in to NurseONE. Click on the Library tab. Click on the webliographies button. <p>Informatics Community of Practice (CoP). A NurseONE journal Club for informatics nurses in 2 provinces (NB and NS). Plans to go national, but no date has been set. Other nursing groups can request to host a Community of Practice on NurseONE.</p> <p>A new Knowledge Feature on Nursing Informatics is scheduled to be posted on NurseONE in September 2012 (a selection of varied resources presented by experts).</p> <p>http://www.nurseone.ca/Default.aspx?portlet=StaticHtmlViewerPortlet&plang=1&ptdi=299</p> <ul style="list-style-type: none"> on the NurseONE homepage, click 'knowledge features' on the top tool bar

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COACH (Canadian Organization for the Advancement of Computers in Health): Canada's Health Informatics Association	COACH	<ul style="list-style-type: none"> • Website • Teaching tool • Journal • Forum • Social media 	<p>www.coachorg.com</p> <p>Member recommendation that all Schools of Nursing take advantage of Coach's Academic Institutional Membership (AIM) resource as it offers a wide variety of benefits for members. Many tools can be adapted for NI.</p> <p>Health Informatics Training System (HITS): Tool for use by healthcare users everywhere as they seek to learn basic concepts and terminology in the use of computers in healthcare.</p> <p>Direct link recommended: http://coachorg.com/en/careerdevelopment/healthinformaticstrainingsystemhits.asp - Google search "COACH health informatics training system"</p> <p>Additionally, COACH hosts the Canadian Telehealth Forum (CTF). The CTF brings together the many stakeholders involved and interested in furthering the development and implementation of telehealth practices</p> <p>Direct link recommended: http://coachorg.com/en/ctf.asp</p>
Health care informatics: An interdisciplinary approach.	Englehardt, S.P. & Nelson, R. (Eds)	<ul style="list-style-type: none"> • Textbook 	<p>2002. St. Louis, MO: Mosby.</p> <p>This textbook focuses on topics in informatics relevant to all fields of healthcare, complete with chapter outlines, objectives, key terms, and discussion questions. A unique online supplement complements the book to offer complete, electronic support for both instructors and students. This text discusses trends and innovative strategies from a contemporary, mainstream perspective. (adapted from publisher's description)</p>
Canada Health Infoway	Infoway	<ul style="list-style-type: none"> • Website • Resources • Forums • Events/ 	<p>https://www.infoway-inforoute.ca/</p> <p>Infoway is an independent not-for-profit corporation created by Canada's First Ministers in 2001 to foster and accelerate the development and adoption of electronic health record (EHR) systems with compatible</p>

Title	Author	Type of Resource	Source and Description
		<ul style="list-style-type: none"> Conferences • Online courses (Standards Collaborative) • Social media 	<p>standards and communications technologies. Funded by the Government of Canada, <i>Infoway</i> works with the country's ten provinces and three territories to implement private, secure EHR systems, enabling best practices and successful projects in one region to be shared or replicated in other regions.</p> <p>Direct link recommended: https://www.infoway-inforoute.ca/index.php/progress-in-canada/clinician-peer-support-networks</p> <ul style="list-style-type: none"> - Google search "Canada Health Infoway, clinician support network" <p>Peer-to-peer programs to support physicians, nurses and pharmacists within the practice setting.</p>
Health Informatics and Nursing in Canada	Hannah, K.	<ul style="list-style-type: none"> • Article 	<p>http://www.healthcareimc.com/bcovers/previous/Vol_XIX_No_3/pdfs/Vol_XIX_No_3_7.pdf</p> <ul style="list-style-type: none"> - Google search "health informatics, Hannah, 2005" <p>This article discusses how relevant nursing components must be included in a national health information system in Canada. September, 2005.</p>
Introduction to Nursing Informatics	Hannah, K. J., Ball, M. J. & Edwards, M.J.A. (Eds.)	<ul style="list-style-type: none"> • Textbook 	<p>Springer Publishing. 2006. ISBN:038726096X</p> <p>A primer for those new to nursing informatics. It provides a thorough introduction to basic terms and concepts, as well as an in-depth exploration of the most prevalent applications in nursing practice, education, administration, and research.</p>
Handbook of informatics for nurses & healthcare professionals	Hebda, T., Czar, P. & Mascara, C.	<ul style="list-style-type: none"> • Handbook 	<p>2005 (3rd edition ed.). NJ: Prentice Hall.</p> <p>A guide to healthcare computer technology, with information on intranets, regulations, legislation, trends, and other topics. Includes examples and case studies in each chapter, as well as an introduction to the characteristics and benefits of the use of Computerized Patient Records (description from the publisher)</p>
The Nursing Informatics Implementation Guide	Callahan Hunt, E., Breckenridge Sproat, S. &	<ul style="list-style-type: none"> • Textbook 	<p>Springer, 2004. ISBN 978-0-387-40837-8</p> <p>A practical guide for nurses and healthcare professionals regarding the implementation processes of both small and large clinical computer</p>

Title	Author	Type of Resource	Source and Description
	Rutherford Kitzmiller, R.		systems used in various healthcare settings.
Kwantlen BSN Integrated Nursing Informatics Curriculum	Kaminski, J. (developed by)	<ul style="list-style-type: none"> • Website • Teaching tool • Course outline • Learning Ctre. • Self-assessment tool • Listserves 	http://nursing-informatics.com/kwantlen/index.html Nursing Informatics Integration for the BSN in Nursing Program at Kwantlen Polytechnic University Design & Content by © June Kaminski, RN MSN PhD(c) - 1999 - 2011
Integrating technology in nursing education: Tools for the knowledge era	Mastrian, K. G., McGonigle, D., Mahan, W. L., & Bixler, B.	<ul style="list-style-type: none"> • Textbook • Teaching tool 	Full reference to obtain a hard copy: - Mastrian, K. G., McGonigle, D., Mahan, W. L., & Bixler, B. (2011). Integrating technology in nursing education: Tools for the knowledge era. Sudbury, MA: Jones and Bartlett. Provides valuable, easy-to-use strategies on incorporating technology into the classroom; examines the increased role of technology in healthcare and its transformational impact on that field, allowing nurses to understand current and future trends and thus, integrate technology into nursing education in order to effectively prepare students for a new, technologically-driven healthcare environment. Also featured are topics on learning theories, the instructional design process, changes in higher education, and variations in learning environments. Using case studies, critical-thinking exercises, weblinks, and more, the text challenges nurses to think critically and formulate compelling teaching strategies. (adapted from publisher's description)
Research & clinical Resources for Evidence Based Nursing: Nursing Informatics	McGill University Health Centre	<ul style="list-style-type: none"> • Website 	http://muhc-ebn.mcgill.ca/nursing_informatics.htm Provides a list of resources on nursing informatics including organizations, handbooks, newsletters, journals and articles.
Nursing Informatics: Foundation of Knowledge	McGonigle, D. & Mastrian, K.	<ul style="list-style-type: none"> • Textbook 	Jones & Bartlett Publishers; 1 edition (July 31, 2008) Covers the history of healthcare informatics, current issues, basic informatics concepts, and health information management applications; comprehensive introductory chapters that explain the core sciences of nursing informatics; explains how nursing informatics relates to knowledge acquisition, knowledge processing, knowledge generation, knowledge dissemination and feedback, all of which build the science of

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			nursing. Other info: Best to teach NI in computer lab as interactive exercises.
Philips	Philips	<ul style="list-style-type: none"> • Teaching tool • Presentation • Handbook/ manual • Tutorial • Conference 	www.philips.ca A company that provides solutions designed for needs of clinical care teams and patients with innovative and affordable technology solutions throughout the entire care cycle.
Informatics and Nursing: Competencies and Application	Thede, L.Q. & Sewell, J.	<ul style="list-style-type: none"> • Textbook • Website 	Lippincott Williams & Wilkins; 3 edition (April 1 2009) Information to supplement the textbook can be found at: http://dlthede.net/Informatics/Informatics.html Thoroughly updated to reflect current technologies; reviews the concepts and applications of nursing informatics. Starting with an introduction to nursing informatics, the contents proceed from computer basics to skills and techniques for using the end product of informatics: data. Other units review the effects that the Internet is having on healthcare, the ins and outs of using personal productivity software, and informatics in the clinical area. (adapted from publisher's description)
AMIA 10x10 University of Minnesota	Westra, B.	<ul style="list-style-type: none"> • Website • Distance Learning Course • Social media 	http://www.amia.org/education/academic-and-training-programs/10x10-university-minnesota-school-nursing - Google search "AMIA 10x10 Minnesota" AMIA aims to lead the way in transforming healthcare through trusted science, education, and the practice of informatics. AMIA connects a broad community of professionals and students interested in informatics. AMIA is the bridge for knowledge and collaboration across a continuum, from basic and applied research to the consumer and public health arenas. AMIA actively supports five domains: translational bioinformatics, clinical research informatics, clinical informatics, consumer health informatics, and public health informatics
Canadian Journal of Nursing Informatics	NA	<ul style="list-style-type: none"> • Journal • Website 	http://cjni.net/journal/ An on-line publication focused on the evolving field of Canadian nursing informatics; a dynamic vehicle to express the voice for Nursing Informatics that is championed and lived by many nurses in Canada and around the globe; useful columns that focus on new ideas and

Title	Author	Type of Resource	Source and Description
			breakthroughs in informatics in practice, education, research and administration; various reviews of pertinent informatics books, software, web sites, nursing information systems, multimedia and other resources; academic, research, and practice related papers, presentations, and detailed abstracts that present new work done in the informatics field; opinion pieces, essays, and news announcements.
Canadian Nursing Informatics Association	NA	<ul style="list-style-type: none"> • Journal • Website • Resource provided by peers • Newsletter • Conference • Associate group of CNA • Social media • Journal club • Virtual events • Education initiatives • Scholarship • Forum in English/ French • Reports 	http://cnia.ca Direct link recommended: http://cnia.ca/education_links.htm The voice for Nursing Informatics in Canada. Recognizing the importance of the work the CNIA is undertaking, the Canadian Nurses Association has granted emerging group status to the CNIA. The CNIA is also affiliated with COACH, Canada's National Health Informatics Association.
Canadian Nurses Association	NA	<ul style="list-style-type: none"> • Website • Social media 	http://www.cna-aiic.ca/ Specific link to nursing informatics: http://www2.cna-aiic.ca/CNA/documents/pdf/publications/NursingInformaticsSept_2001_e.pdf - Google search "CNA nursing informatics, issues and trends"
Nursing Informatics Learning Centre	NA	<ul style="list-style-type: none"> • Website • On-line courses 	http://nursing-informatics.com/courses Provides professional development NI courses within the categories of Nursing Practice, Education, Administration and Theory; approved by the California Board of Nursing for CE credit. Some courses are short, fit to complete in an afternoon. Others are more personalized and self-

Title	Author	Type of Resource	Source and Description
			paced - all are taken entirely on-line in the privacy of your office.
HiMSS: Healthcare Information and Management Systems Society (US)	NA	<ul style="list-style-type: none"> Website Social media 	http://www.himss.org/ASP/index.asp A cause-based, not-for-profit organization focused on providing global leadership for the optimal use of information technology (IT) and management systems for the betterment of healthcare.
International Congress on Nursing Informatics	NA	<ul style="list-style-type: none"> Conference website Social media 	http://www.ni2012.org/ The NI series of conferences is the leading gathering in the world for nurses interested in the use of informatics and health information technology. NI 2012 was held in June in Montreal, Quebec, Canada.
International Medical Informatics Association, Nursing Informatics Special Interest Group (IMIA NI SIG)	NA	<ul style="list-style-type: none"> Website Social media 	http://www.imiani.org/index.php?option=com_frontpage&Itemid=1 Promotes the use of technology to provide even better conditions and quality to the healthcare delivered. A collaborative forum to share experiences and disseminate accomplishments.
Nova Scotia Nursing Informatics Groups	NA	<ul style="list-style-type: none"> Website Chat room 	http://www.nsnig.ca/ Promotes and develops the advancement of Nursing Informatics in Nova Scotia.
On-line Journal of Nursing Informatics	NA	<ul style="list-style-type: none"> Journal Website Social media 	http://ojni.org Includes peer-reviewed, original, high quality scientific papers, reviews of articles, practice-based articles, and databases related to nursing informatics.
Ontario Nursing Informatics Group	NA	<ul style="list-style-type: none"> Website Forums Events Conferences Newsletter Social media 	http://onig.on.ca/ ONIG was formed in 1980 and achieved RNAO status as an affiliate group in 1991. It provides a forum for nursing professionals to communicate and disseminate current developments in healthcare information systems.
RNAO	NA	<ul style="list-style-type: none"> Website e-learning Social media BPGs for Personal Digital Assistance 	http://rnao.ca/ The Registered Nurses' Association of Ontario (RNAO) is the professional association representing registered nurses in Ontario. RNAO continues to be funded by the Ontario Ministry of Health and

Title	Author	Type of Resource	Source and Description
		(PDA) <ul style="list-style-type: none"> • On-line videos • Fact sheets • Resource kits • Newsletters • Brochures • Flyers 	Long Term Care (MOHLTC) and eHealth Ontario to implement the Nursing and eHealth Project. The purpose of the initiative is to facilitate the nursing profession's involvement in the Ontario eHealth agenda and support nurses to take a leadership role in the adoption of communication and information systems in all healthcare settings. Direct links recommended: http://elearning.rnao.ca/ www.rnao.org/ehealthresources http://www.rnao.org/eHealth_Etiquette www.rnao.org/ehealth www.rnao.org/Faculty_Resource www.ehealthtoolkit.rnao.ca http://www.rnao.ca/eHealth_course http://www.rnao.org/PDA_Fact_Sheet - Google search "RNAO, nurses, use of computer technology" (second link)
Essentials of Nursing Informatics	Saba, V. & McCormick, K.	<ul style="list-style-type: none"> • Textbook 	2011. New York, NY McGraw-Hill; 5 edition Explores the ever-growing role technology plays in the field of nursing. Offering theoretical background on how informatics serves many aspects of the profession, with practical help in unlocking computing's benefits -- both now and into the future. Numerous case studies and examples add real-world relevance to the material.
Nursing and Informatics for the 21st Century: An International Look at Practice, Education and EHR Trends, 2nd edition	Weaver, C., Delaney, C., Weber, P., & Carr, R. (Eds)	<ul style="list-style-type: none"> • Textbook 	2010. Healthcare Information and Management Systems Society (HIMSS) and American Medical Informatics Association. Chicago, IL: HIMSS. Examines the revolution that has occurred in nursing in the past four years and explores the role information technology is playing in this transformation, with a thoughtful examination of nursing practice, science and research, and education across the globe.
Computers Informatics Nursing (CIN)	Nicoll, L.	<ul style="list-style-type: none"> • Journal • Social media 	http://journals.lww.com/cinjjournal/ Is at the interface of the science of information and the art of nursing, publishing articles on the latest developments in nursing informatics,

Title	Author	Type of Resource	Source and Description
			research, and educational technology.
Nursing Education Perspectives	National League for Nursing	<ul style="list-style-type: none"> Journal 	http://www.nln.org/nlnjournal/ Peer-reviewed, bimonthly journal that provides an evidence base for best practices and a forum for the exchange of information regarding teaching and learning, curricula, technology, the recruitment and retention of students, and other issues important to nursing education.
SIM Chart	ELSEVIER	<ul style="list-style-type: none"> Teaching tool 	http://www.elsevier.ca/ A web-based simulated electronic health record (EHR) system that was specifically developed as a teaching tool for health science education. It combines practical, real-world experience in electronic documentation, with powerful, fully integrated educator support to help incorporate EHR practice into the curriculum.
Health IT Workforce Development Curriculum Components	NA	<ul style="list-style-type: none"> Curriculum 	Teams created 20 three-credit “courses” that are now open to the public and free for all to use. The goal is to be able to distribute these curricular materials around the globe to scale-up workforce for increasingly digitized world of health and healthcare. The curriculum materials are now available to the public on the NTDC website at http://www.onc-ntdc.org or http://www.onc-ntdc.info
College of Nurses of Ontario	NA	<ul style="list-style-type: none"> Website Learning modules 	http://www.cno.org The governing body for registered nurses (RNs), registered practical nurses (RPNs) and nurse practitioners (NPs) in Ontario, Canada. Direct link recommended: http://www.cno.org/en/learn-about-standards-guidelines/
Canadian Health Outcomes for Better Information and Care Project (C-HOBIC)	NA	<ul style="list-style-type: none"> Tool kit 	http://www.cna-aiic.ca/c-hobic/toolkit/default_e.aspx - Google search “C-HOBIC tool kit” A systematic, structured language to admission and discharge assessments of patients receiving acute care, complex continuing care, long-term care or home care. This language can be abstracted into provincial databases or EHRs; builds on the Ontario HOBIC program; currently being implemented in Saskatchewan and Manitoba.
National Institutes of Health Informatics	NA	<ul style="list-style-type: none"> Website Seminars 	http://www.nihi.ca/

Title	Author	Type of Resource	Source and Description
		<ul style="list-style-type: none"> • Events • Video archive 	<p>Canada's first national organization dedicated to fostering HI innovation, research and education. NIHI is a virtual, self-sustaining institute of institutes.</p> <p>Hosts a National Community of Scholars (NaCOS) that enables people in academia, industry, government, and healthcare organizations to browse and search for people with Health Informatics expertise in Canada. It allows searches by keywords so experts and their work can be located quickly.</p>
<p>Innovations in Nursing Informatics: Clinical experience is foundational to a successful career in informatics.</p>	<p>Lewis, A.</p>	<ul style="list-style-type: none"> • Article 	<p>Advance for Long-term Care Management. Posted on: January 9, 2012. Retrieved on January 16, 2012 at: http://long-term-care.advanceweb.com/Features/Articles/Innovations-in-Nursing-Informatics.aspx</p> <p>- Google search "innovations in nursing informatics"</p> <p>Discusses how to launch into NI within a nursing career and then obtain board certification in nursing informatics.</p>

PART 3

INVENTORY OF CANADIAN AND INTERNATIONAL FACULTY DEVELOPMENT NI RESOURCES – COMPETENCIES SUMMARY

In this section, a summary of the competencies within each resource is provided so that readers can quickly determine which resources include more than one competency.

Competencies:

- A. Uses relevant information and knowledge to support the delivery of evidence-informed patient/client care.
- B. Uses ICTs in accordance with professional and regulatory standards and workplace policies.
- C. Uses information and communication technologies in the delivery of patient/client care.

Title	Author	Type of Resource	Source and Description	Competencies		
				A	B	C
Telehealth Benefits and Adoption: Connecting People and Providers Across Canada	Canada Health Infoway	<ul style="list-style-type: none"> Report 	<p>May 30th 2011</p> <p>https://www.infoway-inforoute.ca/index.php/resources/reports</p> <p>A report documenting Telehealth's delivery of a number of access, quality and productivity benefits for clinicians, patients and the healthcare system.</p>			✓
NurseOne Portal	Canadian Nurses Association	<ul style="list-style-type: none"> Website Social media E-Learning Modules E-books/library Webliographies Community of practice Knowledge feature (coming soon) 	<p>http://www.nurseone.ca/</p> <p>Specific recommendations:</p> <p>Selected webliographies found in the library: developed especially for nurses in Canada by NurseONE Manager. Current topics include - November 2009: Nursing Informatics; June 2010: Information Communication Technologies; September 2010: Technology in the Classroom</p> <p>To access webliographies</p> <ol style="list-style-type: none"> Log in to NurseONE. Click on the Library tab. Click on the webliographies button. <p>Informatics Community of Practice (CoP). A NurseONE</p>	✓	✓	✓

Title	Author	Type of Resource	Source and Description	Competencies		
				A	B	C
			<p>journal Club for informatics nurses in 2 provinces (NB and NS). Plans to go national, but no date has been set. Other nursing groups can request to host a Community of Practice on NurseONE.</p> <p>A new Knowledge Feature on Nursing Informatics is scheduled to be posted on NurseONE in September 2012 (a selection of varied resources presented by experts). http://www.nurseone.ca/Default.aspx?portlet=StaticHtmlViewerPortlet&plang=1&ptdi=299 - on the NurseONE homepage, click 'knowledge features' on the top tool bar</p>			
COACH (Canadian Organization for the Advancement of Computers in Health): Canada's Health Informatics Association	COACH	<ul style="list-style-type: none"> • Website • Teaching tool • Journal • Forum • Social media 	<p>www.coachorg.com</p> <p>Member recommendation that all Schools of Nursing take advantage of Coach's Academic Institutional Membership (AIM) resource as it offers a wide variety of benefits for members. Many tools can be adapted for NI.</p> <p>Health Informatics Training System (HITS): Tool for use by healthcare users everywhere as they seek to learn basic concepts and terminology in the use of computers in healthcare.</p> <p>Direct link recommended: http://coachorg.com/en/careerdevelopment/healthinformatics Trainingsystemhits.asp - Google search "COACH health informatics training system"</p> <p>Additionally, COACH hosts the Canadian Telehealth Forum (CTF). The CTF brings together the many stakeholders involved and interested in furthering the development and implementation of telehealth practices</p> <p>Direct link recommended: http://coachorg.com/en/ctf.asp</p>	✓	✓	✓

Title	Author	Type of Resource	Source and Description	Competencies		
				A	B	C
Faculty development initiatives for the integration of informatics competencies and point-of-care technologies in undergraduate nursing education.	Curran, C. R.	<ul style="list-style-type: none"> Journal article 	<p>Nursing Clinics of North America. 2008. 43(4), 523-33.</p> <p>http://www.nursing.theclinics.com/article/S0029-6465(08)00058-3/abstract (subscription required)</p> <p>- Google search 'faculty development, Curran 2008</p> <p>This article describes a successful faculty development program that was aimed at upgrading the technology and informatics skills of the faculty while at the same time developing and threading informatics skills across the baccalaureate nursing curriculum.</p> <p>-</p>		✓	
Health care informatics: An interdisciplinary approach.	Englehardt, S.P. & Nelson, R. (Eds)	<ul style="list-style-type: none"> Textbook 	<p>2002. St. Louis, MO: Mosby.</p> <p>This textbook focuses on topics in informatics relevant to all fields of healthcare, complete with chapter outlines, objectives, key terms, and discussion questions. A unique online supplement complements the book to offer complete, electronic support for both instructors and students. This text discusses trends and innovative strategies from a contemporary, mainstream perspective. (adapted from publisher's description)</p>	✓	✓	✓
Improving information technology competencies: Implications for psychiatric mental health nursing.	Fetter, M.S.	<ul style="list-style-type: none"> Journal article 	<p>Issues in Mental Health Nursing. 2009 Jan; 30 (1), 3-13</p> <p>http://informahealthcare.com/doi/abs/10.1080/01612840802555208 (subscription required)</p> <p>- Google search "technology competencies, implications, fetter, 2009"</p> <p>This report updates psychiatric-mental health nurses on the IT competencies literature, recent enhancement initiatives and innovations, and their implications for the specialty. It addresses a concern that many nurses may not possess IT capabilities and that nurse educators are not prepared to teach them. IT competency evaluations indicate novice skill levels for most faculty and students.</p>		✓	
Curriculum strategies to improve baccalaureate	Fetter, M. S.	<ul style="list-style-type: none"> Journal article 	The Journal of Nursing Education. 2009, 48(2), 78-85.		✓	

Title	Author	Type of Resource	Source and Description	Competencies		
				A	B	C
nursing information technology outcomes.			http://www.healio.com/nursing/journals/JNE/%7B7205258D-6162-4732-BD0F-6EED25926F5D%7D/Curriculum-Strategies-to-Improve-Baccalaureate-Nursing-Information-Technology-Outcomes (subscription required) - Google search "curriculum strategies, fetter, 2009" The Technology Informatics Guiding Education Reform (TIGER) Initiative, a coalition aiming to advance IT outcomes in nursing education, has cited benchmarking and sharing best practices as key to achieving its goals. Thus, this article reports on the process, results, and implications of a project using curriculum strategies to enhance IT outcomes. A 3-year action plan directed faculty, student, and agency evaluation, curriculum mapping, model learning module, and documentation development.			
Graduating nurses' self-evaluation of information technology competencies.	Fetter, M.S.	<ul style="list-style-type: none"> Journal article 	Journal of Nursing Education. 2009 Feb; 48 (2), 86-90. http://www.healio.com/nursing/journals/JNE/%7B1B9742E0-E625-44FD-BD1F-D7D64BDCE8B9%7D/Graduating-Nurses-Self-Evaluation-of-Information-Technology-Competencies (subscription required) - Google search "graduating nurses' self-evaluation, fetter 2009" Using a standardized instrument, graduating baccalaureate nurses were most confident in their Internet, word processing, and systems operations skills; they rated themselves lowest on care documentation and planning, valuing informatics knowledge, skills development, and data entry competencies. Exposure to the latest informatics systems was a priority. Students want fair access to informatics and technology-rich clinical settings; more realistic informatics and technology simulations; enthusiastic and capable faculty; and better hardware, software, and literature-searching support in agencies, classrooms, laboratories, and residences.		✓	

Title	Author	Type of Resource	Source and Description	Competencies		
				A	B	C
			Nursing programs, clinical agencies, and policy makers need to recognize that students are advancing beyond acquiring informatics skills to integrating health information literacy into practice.			
Enhancing Baccalaureate Nursing Information Technology Outcomes: Faculty Perspectives.	Fetter, M.S.	<ul style="list-style-type: none"> Journal article 	<p>International Journal of Nursing Education Scholarship. 2008, 5(1), 1-15.</p> <p>http://www.degruyter.com/view/j/ijnes.2008.5.1/ijnes.2008.5.1.1440/ijnes.2008.5.1.1440.xml?format=INT (subscription required)</p> <ul style="list-style-type: none"> Google search “enhancing baccalaureate nursing, fetter 2008” <p>Faculty members were surveyed regarding barriers and strategies for improving information technology outcomes. Project findings have educational, clinical agency, legal, and policy implications.</p>		✓	
Integrating information literacy across a BSN curriculum.	Flood, L. S., Gasiewicz, N., & Delpier, T.	<ul style="list-style-type: none"> Journal article 	<p>Journal of Nursing Education. 2010 Feb., 49(2), 101-104</p> <p>http://www.healio.com/nursing/journals/JNE/%7B61244979-37C3-48FD-8A93-7FE6DE846E76%7D/Integrating-Information-Literacy-Across-a-BSN-Curriculum (subscription required)</p> <ul style="list-style-type: none"> Google search “literacy across a BSN curriculum” <p>This article offers a systematic approach to incorporating information literacy, a vital component of informatics, across a baccalaureate of science in nursing curriculum.</p>		✓	
Canada Health Infoway	Infoway	<ul style="list-style-type: none"> Website Social media Resources Forums Events/Conferences Online courses (Standards Collaborative) 	<p>https://www.infoway-inforoute.ca/</p> <p>Infoway is an independent not-for-profit corporation created by Canada’s First Ministers in 2001 to foster and accelerate the development and adoption of electronic health record (EHR) systems with compatible standards and communications technologies. Funded by the Government of Canada, Infoway works with the country’s ten provinces and three territories to implement private, secure EHR systems, enabling best practices and</p>	✓		✓

Title	Author	Type of Resource	Source and Description	Competencies		
				A	B	C
			<p>successful projects in one region to be shared or replicated in other regions.</p> <p>Direct link recommended: https://www.infoway-inforoute.ca/index.php/progress-in-canada/clinician-peer-support-networks <ul style="list-style-type: none"> - Google search "Canada Health Infoway, clinician support network" </p> <p>Peer-to-peer programs to support physicians, nurses and pharmacists within the practice</p>			
Health Informatics and Nursing in Canada	Hannah, K.	<ul style="list-style-type: none"> Article 	<p>http://www.healthcareimc.com/bcovers/previous/Vol_XIX_No_3/pdfs/Vol_XIX_No_3_7.pdf</p> <ul style="list-style-type: none"> - Google search "health informatics, Hannah, 2005" <p>This article discusses how relevant nursing components must be included in a national health information system in Canada. September, 2005</p>	✓	✓	✓
Introduction to Nursing Informatics	Hannah, K. J., Ball, M. J. & Edwards, M.J.A. (Eds.)	<ul style="list-style-type: none"> Textbook 	<p>Springer Publishing. 2006. ISBN:038726096X</p> <p>A primer for those new to nursing informatics. It provides a thorough introduction to basic terms and concepts, as well as an in-depth exploration of the most prevalent applications in nursing practice, education, administration, and research.</p>	✓	✓	✓
Handbook of informatics for nurses & healthcare professionals	Hebda, T., Czar, P., & Mascara, C.	<ul style="list-style-type: none"> Handbook 	<p>2005 (3rd edition ed.). NJ: Prentice Hall.</p> <p>A guide to healthcare computer technology, with information on intranets, regulations, legislation, trends, and other topics. Includes examples and case studies in each chapter, as well as an introduction to the characteristics and benefits of the use of Computerized Patient Records (description from the publisher)</p>	✓	✓	✓
The Nursing Informatics Implementation Guide	Callahan Hunt, E., Breckenridge Sproat, S. & Rutherford Kitzmiller, R.	<ul style="list-style-type: none"> Textbook 	<p>Springer, 2004. ISBN 978-0-387-40837-8</p> <p>A practical guide for nurses and healthcare professionals regarding the implementation processes of both small and large clinical computer systems used in various healthcare settings.</p>	✓	✓	✓

Title	Author	Type of Resource	Source and Description	Competencies		
				A	B	C
Kwantlen BSN Integrated Nursing Informatics Curriculum	Kaminski, J. (developed by)	<ul style="list-style-type: none"> Website Teaching tool Course outline Learning Centre Self-assessment tool Listserve 	http://nursing-informatics.com/kwantlen/index.html Nursing Informatics Integration for the BSN in Nursing Program at Kwantlen Polytechnic University Design & Content by © June Kaminski, RN MSN PhD(c) - 1999 – 2011 The developer has a similar website at www.nursing-informatics.com	✓		✓
Integrating technology in nursing education: Tools for the knowledge era	Mastrian, K. G., McGonigle, D., Mahan, W. L., & Bixler, B.	<ul style="list-style-type: none"> Textbook Teaching tool 	Full reference to obtain a hard copy: - Mastrian, K. G., McGonigle, D., Mahan, W. L., & Bixler, B. (2011). Integrating technology in nursing education: Tools for the knowledge era. Sudbury, MA: Jones and Bartlett. Provides valuable, easy-to-use strategies on incorporating technology into the classroom; examines the increased role of technology in healthcare and its transformational impact on that field, allowing nurses to understand current and future trends and thus, integrate technology into nursing education in order to effectively prepare students for a new, technologically-driven healthcare environment. Also featured are topics on learning theories, the instructional design process, changes in higher education, and variations in learning environments. Using case studies, critical-thinking exercises, weblinks, and more, the text challenges nurses to think critically and formulate compelling teaching strategies. (adapted from publisher's description)	✓	✓	✓
Research & clinical Resources for Evidence Based Nursing: Nursing Informatics	McGill University Health Centre	<ul style="list-style-type: none"> Website 	http://muhc-ebn.mcgill.ca/nursing_informatics.htm Provides a list of resources on nursing informatics including organizations, handbooks, newsletters, journals and articles.	✓	✓	✓
Nursing Informatics: Foundation of Knowledge	McGonigle, D. & Mastrian, K.	<ul style="list-style-type: none"> Textbook 	Jones & Bartlett Publishers; 1 edition (July 31, 2008) Covers the history of healthcare informatics, current issues, basic informatics concepts, and health information	✓	✓	✓

Title	Author	Type of Resource	Source and Description	Competencies		
				A	B	C
			management applications; comprehensive introductory chapters that explain the core sciences of nursing informatics; explains how nursing informatics relates to knowledge acquisition, knowledge processing, knowledge generation, knowledge dissemination and feedback, all of which build the science of nursing. Other info: Best to teach NI in computer lab as interactive exercises.			
Philips	Philips	<ul style="list-style-type: none"> • Teaching tool • Presentation • Handbook/manual • Tutorial • Conference 	www.philips.ca A company that provides solutions designed for needs of clinical care teams and patients with innovative and affordable technology solutions throughout the entire care cycle.			✓
Nursing Research: Generating and Assessing Evidence for Nursing Practice	Polit, D.	<ul style="list-style-type: none"> • Textbook 	Useful resource for nurses being able to conduct or read research so that they may apply this towards evidence-based practice.	✓		
Informatics and Nursing: Competencies and Application	Thede, L.Q & Sewell, J.	<ul style="list-style-type: none"> • Textbook • Website 	Lippincott Williams & Wilkins; 3 edition (April 1 2009) Information to supplement the textbook can be found at: http://dlthede.net/Informatics/Informatics.html Thoroughly updated to reflect current technologies; reviews the concepts and applications of nursing informatics. Starting with an introduction to nursing informatics, the contents proceed from computer basics to skills and techniques for using the end product of informatics: data. Other units review the effects that the Internet is having on healthcare, the ins and outs of using personal productivity software, and informatics in the clinical area. (adapted from publisher's description)	✓		✓
Informatics in the Nursing Curriculum: A National Survey	Thompson, B. & Skiba, D.	<ul style="list-style-type: none"> • Journal article 	Nursing Education Perspectives. 2008. 29(5), 312-316. http://www.nlnjournal.org/doi/pdf/10.1043/1536-5026%282008%29029%5B0312%3AHFTN%5D2.0.CO%3B2		✓	

Title	Author	Type of Resource	Source and Description	Competencies		
				A	B	C
			Discusses major gaps in preparing nurses to use informatics tools to communicate with patients and healthcare professionals, manage knowledge, mitigate error, promote quality, and support clinical decision-making. The author calls for faculty and administrators to begin the dialogue that ensures nursing informatics requirements are integrated into their courses and curricula so future nurses have computer and information literacy knowledge and skills and can demonstrate informatics competencies.			
CHIRAD - Centre for Health Informatics Research and Development (UK)	University of Winchester and Walter Sisulu University in Mthatha, South Africa	<ul style="list-style-type: none"> Website, portal Social media 	http://www.chirad.org/ Provides an environment for the development of Health Informatics as an academic subject. CHIRAD is a company that is a non-for-profit organization and a virtual R&D centre for Health Informatics.	✓		
AMIA 10x10 University of Minnesota	Westra, B.	<ul style="list-style-type: none"> Website Distance Learning Course Social media 	http://www.amia.org/education/academic-and-training-programs/10x10-university-minnesota-school-nursing - Google search "AMIA 10x10 Minnesota" AMIA aims to lead the way in transforming healthcare through trusted science, education, and the practice of informatics. AMIA connects a broad community of professionals and students interested in informatics. AMIA is the bridge for knowledge and collaboration across a continuum, from basic and applied research to the consumer and public health arenas. AMIA actively supports five domains: translational bioinformatics, clinical research informatics, clinical informatics, consumer health informatics, and public health informatics	✓		✓
ANIA-CARING (formerly the <i>American Nursing Informatics Association</i> and the <i>Capital Area Roundtable on Informatics in Nursing</i>)	NA	<ul style="list-style-type: none"> Website Newsletters Conferences 	http://www.ania-caring.org Provides education, networking, and information resources that enrich and strengthen the roles in the field of nursing informatics.	✓		

Title	Author	Type of Resource	Source and Description	Competencies		
				A	B	C
Canadian Institute for Health Information (CIHI)	NA	<ul style="list-style-type: none"> Website 	http://www.cihi.ca/CIHI-ext-portal/internet/EN/Home/home/cihi000001 A robust resource that shows students the benefits of building the infrastructure so that data can be captured at the point of care (as a by-product of care), and reused for multiple purposes.	✓		
Canadian Journal of Nursing Informatics	NA	<ul style="list-style-type: none"> Journal Website 	http://cjni.net/journal/ An on-line publication focused on the evolving field of Canadian nursing informatics; a dynamic vehicle to express the voice for Nursing Informatics that is championed and lived by many nurses in Canada and around the globe; useful columns that focus on new ideas and breakthroughs in informatics in practice, education, research and administration; various reviews of pertinent informatics books, software, web sites, nursing information systems, multimedia and other resources; academic, research, and practice related papers, presentations, and detailed abstracts that present new work done in the informatics field; opinion pieces, essays, and news announcements.	✓	✓	✓
Canadian Nursing Informatics Association	NA	<ul style="list-style-type: none"> Journal Website Resource provided by peers Newsletter Conference Associate group of CNA Social media Journal club Virtual events Education initiatives Scholarship 	http://cnia.ca Direct link recommended: http://cnia.ca/education_links.htm The voice for Nursing Informatics in Canada. Recognizing the importance of the work the CNIA is undertaking, the Canadian Nurses Association has granted emerging group status to the CNIA. The CNIA is also affiliated with COACH, Canada's National Health Informatics Association.	✓	✓	✓

Title	Author	Type of Resource	Source and Description	Competencies		
				A	B	C
		<ul style="list-style-type: none"> • Forum in English or French • Reports 				
Canadian Nurses Association	NA	<ul style="list-style-type: none"> • Website • Social media 	http://www.cna-aiic.ca/ Specific link to nursing informatics: http://www2.cna-aiic.ca/CNA/documents/pdf/publications/NursingInformaticsSept_2001_e.pdf - Google search "CNA nursing informatics, issues and trends"	✓	✓	✓
Nursing Informatics Learning Centre	NA	<ul style="list-style-type: none"> • Website • On-line courses 	http://nursing-informatics.com/courses Provides professional development NI courses within the categories of Nursing Practice, Education, Administration and Theory; approved by the California Board of Nursing for CE credit. Some courses are short, fit to complete in an afternoon. Others are more personalized and self-paced - all are taken entirely on-line in the privacy of your office.	✓	✓	✓
HiMSS: Healthcare Information and Management Systems Society (US)	NA	<ul style="list-style-type: none"> • Website • Social media 	http://www.himss.org/ASP/index.asp A cause-based, not-for-profit organization focused on providing global leadership for the optimal use of information technology (IT) and management systems for the betterment of healthcare.	✓		✓
International Classification for Nursing Practice®	NA	<ul style="list-style-type: none"> • Website • Forum 	http://icnp.clinicaltemplates.org/ A unified nursing language system. It is a compositional terminology for nursing practice that facilitates the development of and the cross-mapping among local terms and existing terminologies Direct link recommended: http://www.icn.ch/pillarsprograms/international-classification-for-nursing-practice-icnpr/	✓		

Title	Author	Type of Resource	Source and Description	Competencies		
				A	B	C
			<p>- Google search “international classification for nursing practice”</p> <p>Other info: The ICNP has been cross-mapped to C-HOBIC. This is a useful tool to show undergraduates and graduate students how nursing can be captured in clinical information systems to ensure re-use of data and comparability of nursing sensitive indicators.</p>			
International Congress on Nursing Informatics	NA	<ul style="list-style-type: none"> Conference website Social media 	<p>http://www.ni2012.org/</p> <p>The NI series of conferences is the leading gathering in the world for nurses interested in the use of informatics and health information technology. NI 2012 was held in June in Montreal, Quebec, Canada.</p>	✓	✓	✓
International Medical Informatics Association, Nursing Informatics Special Interest Group (IMIA NI SIG)	NA	<ul style="list-style-type: none"> Website Social media 	<p>http://www.imiani.org/index.php?option=com_frontpage&Itemid=1</p> <p>Promotes the use of technology to provide even better conditions and quality to the healthcare delivered. A collaborative forum to share experiences and disseminate accomplishments.</p>	✓		✓
Manitoba Nursing Informatics Association	NA	<ul style="list-style-type: none"> Website 	<p>http://www.mnia.ca/</p> <p>Provides leadership in informatics, educational opportunities and a networking forum for its members.</p>	✓		
Nova Scotia Nursing Informatics Groups	NA	<ul style="list-style-type: none"> Website Chat room 	<p>http://www.nsnig.ca/</p> <p>Promotes and develops the advancement of Nursing Informatics in Nova Scotia.</p>	✓	✓	✓
On-line Journal of Nursing Informatics	NA	<ul style="list-style-type: none"> Journal Website Social media 	<p>http://ojni.org</p> <p>Includes peer-reviewed, original, high quality scientific papers, reviews of articles, practice-based articles, and databases related to nursing informatics.</p>	✓	✓	✓
Ontario Nursing Informatics Group	NA	<ul style="list-style-type: none"> Website Forums Events 	<p>http://onig.on.ca/</p> <p>ONIG was formed in 1980 and achieved RNAO status as an affiliate group in 1991. It provides a forum for nursing</p>	✓	✓	✓

Title	Author	Type of Resource	Source and Description	Competencies		
				A	B	C
		<ul style="list-style-type: none"> • Conferences • Newsletter • Social media 	professionals to communicate and disseminate current developments in healthcare information systems.			
RNAO	NA	<ul style="list-style-type: none"> • Website • e-learning • Social media • BPGs for Personal Digital Assistance (PDA) • On-line videos • Fact sheets • Resource kits • Newsletters • Brochures • Flyers 	http://rnao.ca/ The Registered Nurses' Association of Ontario (RNAO) is the professional association representing registered nurses in Ontario. RNAO continues to be funded by the Ontario Ministry of Health and Long Term Care (MOHLTC) and eHealth Ontario to implement the Nursing and eHealth Project. The purpose of the initiative is to facilitate the nursing profession's involvement in the Ontario eHealth agenda and support nurses to take a leadership role in the adoption of communication and information systems in all health-care settings. Direct links recommended: http://elearning.rnao.ca/ http://www.rnao.org/eHealth Etiquette www.rnao.org/ehealth www.rnao.org/Faculty Resource www.ehealthtoolkit.rnao.ca http://www.rnao.ca/eHealth course http://rnao.ca/sites/rnao-ca/files/storage/related/6539_PDA Fact Sheet web.pdf - Google search "RNAO, nurses, use of computer technology" (second link)	✓	✓	✓
Technology Informatics Guiding Education Reform (TIGER)	NA	<ul style="list-style-type: none"> • Website 	http://www.tigersummit.com Enables practicing nurses and nursing students to fully engage in the unfolding digital electronic era in healthcare.		✓	
Quality and Safety Education for Nurses	NA	<ul style="list-style-type: none"> • Website • Teaching tools 	http://www.qsen.org/		✓	

Title	Author	Type of Resource	Source and Description	Competencies		
				A	B	C
(QSEN)		<ul style="list-style-type: none"> Learning modules 	A comprehensive resource for quality and safety education for nurses. It is a place to learn and share ideas about educational strategies that promote quality and safety competency development in nursing. Includes annotated bibliographies, faculty-development learning modules, teaching strategies submitted by faculty.			
Essentials of Nursing Informatics	Saba, V. & McCormick, K.	<ul style="list-style-type: none"> Textbook 	<p>2011. New York, NY McGraw-Hill; 5 edition</p> <p>Explores the ever-growing role technology plays in the field of nursing. Offering theoretical background on how informatics serves many aspects of the profession, with practical help in unlocking computing's benefits -- both now and into the future. Numerous case studies and examples add real-world relevance to the material.</p>	✓	✓	✓
Nursing and Informatics for the 21st Century: An International Look at Practice, Education and EHR Trends, 2nd edition	Weaver, C., Delaney, C., Weber, P., & Carr, R. (Eds)	<ul style="list-style-type: none"> Textbook 	<p>2010. Healthcare Information and Management Systems Society (HIMSS) and American Medical Informatics Association. Chicago, IL: HIMSS.</p> <p>Examines the revolution that has occurred in nursing in the past four years and explores the role information technology is playing in this transformation, with a thoughtful examination of nursing practice, science and research, and education across the globe.</p>	✓	✓	✓
Computers Informatics Nursing (CIN)	Nicoll, L.	<ul style="list-style-type: none"> Journal Social media 	<p>http://journals.lww.com/cinjournal/</p> <p>Is at the interface of the science of information and the art of nursing, publishing articles on the latest developments in nursing informatics, research, and educational technology.</p>	✓	✓	✓
Nursing Education Perspectives	National League for Nursing	<ul style="list-style-type: none"> Journal 	<p>http://www.nln.org/nlnjournal/</p> <p>Peer-reviewed, bimonthly journal that provides an evidence base for best practices and a forum for the exchange of information regarding teaching and learning, curricula, technology, the recruitment and retention of students, and other issues important to nursing education.</p>	✓	✓	✓
SIM Chart	ELSEVIER	<ul style="list-style-type: none"> Teaching tool 	http://www.elsevier.ca/	✓		✓

Title	Author	Type of Resource	Source and Description	Competencies		
				A	B	C
			A web-based simulated electronic health record (EHR) system that was specifically developed as a teaching tool for health science education. It combines practical, real-world experience in electronic documentation, with powerful, fully integrated educator support to help incorporate EHR practice into the curriculum.			
Nurse Central Videos	NA	<ul style="list-style-type: none"> Teaching tool 	http://www.youtube.com/user/NurseCentral/featured A one stop shop for everything nursing school and nursing profession related.	✓		
Health IT Workforce Development Curriculum Components	NA	<ul style="list-style-type: none"> Curriculum 	Teams created 20 three-credit “courses” that are now open to the public and free for all to use. The goal is to be able to distribute these curricular materials around the globe to scale-up workforce for increasingly digitized world of health and healthcare. The curriculum materials are now available to the public on the NTDC website at http://www.onc-ntdc.org or http://www.onc-ntdc.info	✓	✓	✓
A legal information sheet for nurses: Social Media	Canadian Nurses Protective Society (CNPS)	<ul style="list-style-type: none"> Information sheet 	infoLAW Social Media (Vol. 19, No. 3, December 2010) http://www.cnps.ca/index.php?page=147 - Google search “CNPS social media” Discusses the risks and risk management involved with social media.		✓	
Docu-Care	iCare & Lippincott Williams and Wilkins	<ul style="list-style-type: none"> Teaching tools 	http://www.icareacademic.com A set of learning tools built by educators for educators that teaches students to critically think about what they're seeing and inputting in an EHR.	✓		
College of Nurses of Ontario	NA	<ul style="list-style-type: none"> Website Learning modules 	http://www.cno.org The governing body for registered nurses (RNs), registered practical nurses (RPNs) and nurse practitioners (NPs) in Ontario, Canada. Direct link recommended:	✓	✓	✓

Title	Author	Type of Resource	Source and Description	Competencies		
				A	B	C
Canadian Health Outcomes for Better Information and Care Project (C-HOBIC)	NA	<ul style="list-style-type: none"> Tool kit 	http://www.cno.org/en/learn-about-standards-guidelines/ http://www.cna-aiic.ca/c-hobic/toolkit/default_e.aspx - Google search "C-HOBIC tool kit" A systematic, structured language to admission and discharge assessments of patients receiving acute care, complex continuing care, long-term care or home care. This language can be abstracted into provincial databases or EHRs; builds on the Ontario HOBIC program; currently being implemented in Saskatchewan and Manitoba.	✓		✓
National Institutes of Health Informatics	NA	<ul style="list-style-type: none"> Website Seminars Events Video archive 	http://www.nihi.ca/ Canada's first national organization dedicated to fostering HI innovation, research and education. NIHI is a virtual, self-sustaining institute of institutes. Hosts a National Community of Scholars (NaCOS) that enables people in academia, industry, government, and healthcare organizations to browse and search for people with Health Informatics expertise in Canada. It allows searches by keywords so experts and their work can be located quickly.	✓	✓	✓
Innovations in Nursing Informatics: Clinical experience is foundational to a successful career in informatics.	Lewis, A.	<ul style="list-style-type: none"> Article 	Advance for Long-term Care Management. Posted on: January 9, 2012. Retrieved on January 16, 2012 at: http://long-term-care.advanceweb.com/Features/Articles/Innovations-in-Nursing-Informatics.aspx - Google search "innovations in nursing informatics" Discusses how to launch into NI within a nursing career and then obtain board certification in nursing informatics.	✓		✓

PART 4

SUPPLEMENTARY HEALTH INFORMATICS RESOURCES

The following supplementary resources provide related information about health informatics in general.

Title	Author	Type of Resource	Source and Description
CUergo	Cornell University	<ul style="list-style-type: none"> Teaching tools 	http://ergo.human.cornell.edu/ Offers free ergonomics podcasts, research articles, and even some fun ergonomics teaching tools such as puzzles.
International Health Terminology Standards Development Organization (IHTSDO)	NA	<ul style="list-style-type: none"> Website 	http://www.ihtsdo.org/ Develops and promotes use of SNOMED CT (a clinical terminology) to support safe and effective health information exchange. SNOMED CT is considered to be the most comprehensive, multilingual healthcare terminology in the world. Canada is a member country.
20 Things I learned about browsers and the web	Google	<ul style="list-style-type: none"> Electronic Book 	http://www.20thingsilearned.com/en-GB Explains everything you have always wanted to know about the web but were afraid to ask.
Saskatchewan Institute of Applied Science and Technology (SIAST)	NA	<ul style="list-style-type: none"> Learning centre 	http://gosiast.com/mentorship/mentoring_websites.shtml Provides a list of various mentoring networks.
EDUCAUSE	NA	<ul style="list-style-type: none"> Website 	http://www.educause.edu/ Advances higher education by promoting the intelligent use of information technology Direct link recommended for Educause Review: http://www.educause.edu/er
Health Ministries	NA	<ul style="list-style-type: none"> Websites 	Alberta http://www.health.alberta.ca/ British Columbia http://www.gov.bc.ca/health/

Title	Author	Type of Resource	Source and Description
			<p>Manitoba http://www.gov.mb.ca/health/</p> <p>New Brunswick http://www.gnb.ca/0051/index-e.asp</p> <p>Newfoundland and Labrador http://www.health.gov.nl.ca/health/</p> <p>Northwest Territories http://www.hltss.gov.nt.ca/</p> <p>Nova Scotia http://www.gov.ns.ca/DHW/</p> <p>Nunavut http://www.hss.gov.nu.ca/en/Home.aspx</p> <p>Ontario http://www.health.gov.on.ca</p> <p>Prince Edward Island http://www.gov.pe.ca/health/</p> <p>Quebec http://www.msss.gouv.qc.ca/</p> <p>Saskatchewan http://www.health.gov.sk.ca/</p> <p>Yukon http://www.hss.gov.yk.ca/</p>
Provincial Privacy Commissioner	NA	<ul style="list-style-type: none"> Website 	<p>http://www.priv.gc.ca/resource/prov/index_e.cfm</p> <p>The Office of the Privacy Commissioner of Canada (OPC) protects and promotes the privacy rights of individuals.</p>
Multimedia Educational Resource for Learning	NA	<ul style="list-style-type: none"> Website 	<p>http://healthsciences.merlot.org/</p>

Title	Author	Type of Resource	Source and Description
and Online Teaching (MERLOT) Health Sciences Portal			An educational resource for teaching and learning including a growing community of instructors, professionals, and students.
Health Information Act privacy training	Physician Office System Program (POSP)	<ul style="list-style-type: none"> Training 	<p>www.posp.ca</p> <p>Helps clinic staff identify the principles of the HIA and apply the act in practical scenarios in a clinic setting with electronic medical records.</p> <p>Instructions:</p> <ul style="list-style-type: none"> Click on 'Privacy Training' on the left hand side At the POSP Member Login, click "Register Now", then complete the registration to access the General Privacy training and/or the Privacy Officer training. This is open to anyone at no cost. At the end of the training, a 'completion notice' can be requested.
Universities that are leaders in Informatics	NA	<ul style="list-style-type: none"> Website 	<p>Canada: See CNIA for a link to all educational programs in Canada that having nursing informatics components: http://cnia.ca/education_links.htm</p> <p>U.S.A. Minnesota (also have an Institute of Health Informatics) http://www.nursing.umn.edu/DNP/Specialties/NursingInformatics/home.html <ul style="list-style-type: none"> Google search "University of Minnesota nursing informatics" <p>University of Maryland http://nursing.umaryland.edu/academic-programs/grad/masters-degree/ms-academic-program/nursing-informatics <ul style="list-style-type: none"> Google search "University of Maryland nursing informatics" <p>Top online schools:</p> <ul style="list-style-type: none"> Kaplan University Northwestern College Rasmussen College University of Phoenix Walden University </p></p>

Title	Author	Type of Resource	Source and Description
Non-nursing NI resources that faculty can access			<ul style="list-style-type: none"> • Faculty presentations on accessing the learning management system • FOIP, confidentiality and the use of social media sites • Library presentations and library support for students and faculty to learn to use the online journal databases • Agency staff RN's teach students to use electronic health records • Individuals who are well placed within the provincial health sector • Faculty member's PhD work - core content is currently being developed

References

- Canadian Association of Schools of Nursing/Association canadienne des écoles de sciences infirmières. (2012). *Nursing informatics entry-to-practice competencies for registered nurses*. Retrieved from http://casn.ca/en/Whats_new_at_CASN_108/items/123.html.
- International Medical Informatics Association. (2009) *The nursing informatics special interest group – definition*. Retrieved from http://www.imiani.org/index.php?option=com_content&task=view&id=27&Itemid=5.