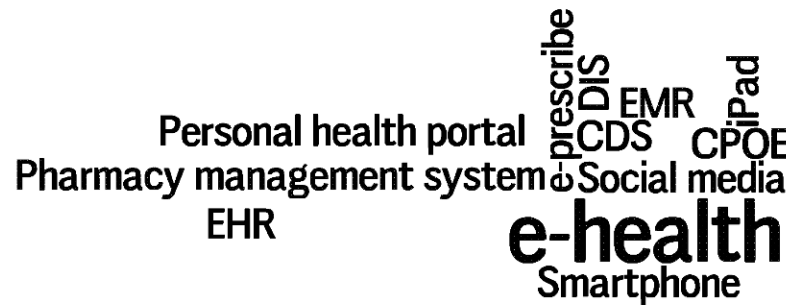


Canadian Pharmacy Informatics Online: Innovation and Inception



A word cloud of terms related to pharmacy informatics. The terms are arranged in a roughly rectangular shape, with 'e-health' being the largest and most central. Other terms include 'Personal health portal', 'Pharmacy management system', 'EHR', 'Social media', 'Smartphone', 'CDS', 'EMR', 'CPOE', 'iPad', 'prescribe', and 'DIS'.

Personal health portal
Pharmacy management system
EHR
Social media
Smartphone
e-health
CDS
EMR
CPOE
iPad
prescribe
DIS

An Update on the AFPC -
Infoway Online Educational
Program Initiative

Presentation Outline

1. Welcome and Introductory Remarks
 - *Donna Pipa, Project Manager*
2. Clinicians in Training Project
 - *Valerie Leung, Canada Health Infoway*
3. AFPC Project Background and Update
 - *Donna Pipa, Project Manager*
4. Design and Development
 - *Marie Rocchi, Faculty Lead and Audience*

Acknowledgements

Project Sponsor:

Harold Lopatka, AFPC Executive Director

Funding:

Canada Health Infoway

Canada Health Infoway's Clinicians in Training Initiative

Valerie Leung, B.Sc.Pharm., M.B.A.

Clinical Leader

Canada Health Infoway

AFPC Project Background and Update

Donna Pipa, B.Sc.Pharm, FCSHP

Project Manager

AFPC - Canada Health Infoway



Educational Program for Optimizing the Use of Pharmacy Information and Information Technology

Preparing Students for an e-Health World

William Gibson who coined the term 'cyberspace' famously said, "The future is already here - it's just not evenly distributed." Canadians expect a connected world – whether it's online banking, online shopping or texting everyone they know. So when it comes to bringing the same level of connectivity to our healthcare system, one key enabler is to ensure clinicians-in-training are prepared to practice in modern, technology-enabled environments.” (Blog, Canada Health Infoway”)

<http://www.youtube.com/watch?v=gxz9ZVvduGc>

Project Overview (1)

- Goal
 - Develop national online education program re: optimal use of pharmacy/health information and information technology
- Partners
 - AFPC (and other pharmacy stakeholders)
 - Canada Health Infoway (funder)
 - Harold Lopatka – Project Sponsor

Project Overview (2)

Key components of the project include:

- Literature Review
- Development and implementation of a national educational program (*including learning and teaching aides and tools*)
- Establishment of a national pharmacy information technology graduate student award
- Recognition and evaluation of the project

Project Oversight

Steering Committee

- Provides direction & oversight
- Provides input re: resources/SMEs
- Committee members
 - AFPC
 - ADPC
 - CAPSI
 - CACDS
 - CPhA
 - CSHP
 - CPTEA
 - Infoway
- Subcommittees, working groups

Project Deliverables

- Literature review
- PIT Glossary/dictionary
- PIT Competency framework, assessment tool
- On-line educational program and teaching guide
- English and French Documents
- Graduate student award
- Communication – updates, orientation and dissemination of info through various means



Project Schedule

- 2 year period, target fall of 2013 with release of the online program.
- Key phases are:
 - initial / setup
 - research (initial / synthesis)
 - educational programming (content development / online program)
 - project evaluation

Educational Program

- Competency based
- Array of modules/units/chapters
- Faculties could pick and choose
- 'Sandbox' environment where possible

Challenges

- Variation in state of implementing electronic health record and expanded scope of pharmacist practice between provinces.
- Variation in teaching and learning approach across faculties.
- Curriculums are crowded - difficult to make additions.
- Finding faculty with expertise
- Need to consider future enhancements and ongoing support

Important Elements of Project

- **Creation of a unique Canadian Competency Framework**
- Analysis of Faculty and Student Needs
- Selection of Learning Management System (LMS)
- Student Award Recipients and Engagement
- Development of a Content, Theme and Design Matrix
- Innovative Pedagogy with Virtual Patients
- Intersection of project with Medicine and Nursing

Competency Framework Development (Phase 1)

An initial draft set of entry to practice competencies for pharmacy students enrolled in first professional degree programs in Canada was developed through:

- Literature review for competency statements and frameworks, and review of existing, validated, relevant competency frameworks including:
 1. Canadian Association of Schools of Nursing (CASN, 2012)
 2. Association of Faculties of Pharmacy of Canada (AFPC, 2010)
 3. COACH (Canada's Health Informatics Association, 2009)
 4. Building Core Competencies in Pharmacy Informatics (Fox, 2010, American Pharmaceutical Association)
 5. American Medical Informatics Association (AMIA, 2012)

Competency Framework Development (Phase 1)

- Compilation of a hybrid set of competencies and competency indicators felt to be relevant to the project
- Consideration of pharmacy-specific context and modification of competencies where appropriate
- Survey created to determine the relevance and priority of each indicator
- Survey participants were asked to:
 1. Determine the content validity of each competency (and accompanying indicator) statement and,
 2. Prioritize the competencies (and indicators) to drive the next phase of program design and development

Competency Framework

- *Three Competencies and 31 Competency Indicators* -

1. Information and knowledge management

Uses relevant information and knowledge to support the delivery of evidence-based patient care

2. Professional and regulatory accountability

Uses ICTs in accordance with professional and regulatory standards and workplace policies

3. Information and communication technologies

Uses information and communication technologies in the delivery of patient/client care

Competency Framework (Phase 2)

- Some rewording and re-ordering of competency indicators occurred based on feedback
- Please refer to Brochure on tables
- The second phase involved the development of content domains, and sequencing and design of the educational program.

Design and Development

Marie Rocchi, B.Sc.Pharm., M.Ed.

Faculty Lead

Leslie Dan Faculty of Pharmacy,
University of Toronto

Conference Theme: Innovation

A new method, idea, product

1. Inception
2. Input → Engagement
3. Informatics
4. Instructional Design → Participatory
5. Inspiration
6. Influences
7. Incubator
8. Interactive
9. Imprimatur

Conference Theme: Innovation

1. Inception
2. Input → Engagement
3. Informatics
4. Instructional Design → Participatory
5. Inspiration
6. Influences
7. Incubator
8. Interactive
9. Imprimatur

Inception

“An act, process, or instance of beginning” (*Merriam Webster*) or,
“The beginning of something, such as an undertaking” (*Free Online Dictionary*)

Plot Synopsis: DiCaprio commits corporate espionage by infiltrating the subconscious of his targets. He is offered a chance to regain his old life as payment for a task considered to be impossible: **“inception”, the implantation of another person's idea into a target's subconscious** (*IMDb = Internet Movie Database*)



Inception: the Sequel

- Starring the audience!
- Reclaim education and join the crew
- Produced by Harold Lopatka
- Cast includes authors, student award winners, reviewers, contributors, and end-users
- We even have critics (*evaluation phase*)
- Like the movie's plot (*levels of dreams*), the e-resource (*educational program*) will provide “layers upon layers” of education that will wrap around the content (*and the competency framework*)





Activity #1 – Inception

- Each table has coloured post-it notes
- Individual and/or Group Activity
- Over the course of the next hour, affix to flip chart/wall beside presenters

***What is the one idea you would most like
to implant in the students'
subconscious?***

Thought Starter: Informatics

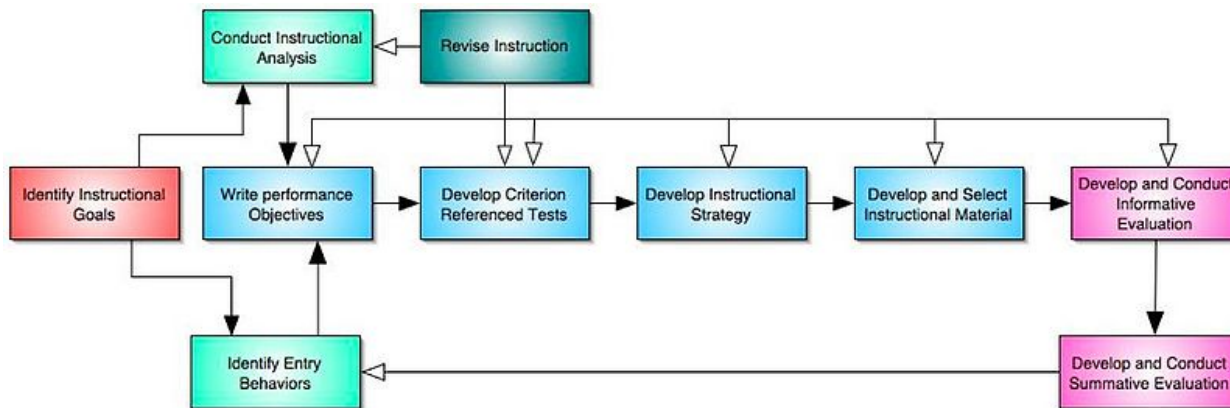
- **Health Informatics** (*also called biomedical informatics*) is the "optimal use of information, often aided by the use of technology, to improve health, health care, public health, and biomedical research" (*Hersh, 2009, includes Shortliffe*)
- **Pharmacy Informatics** is the "use and integration of data, information, knowledge, technology and automation in the medication use process for the purpose of improving health outcomes" (*American Society of Health-System Pharmacists, 2007*)

Conference Theme: Innovation

1. Inception
2. Input → Engagement
3. Informatics
- 4. Instructional Design → Participatory**
- 5. Inspiration**
- 6. Influences**
7. Incubator
8. Interactive
9. Imprimatur

Instructional Design Theory

- Dick & Carrey (1990) model is sequential & systematic



Dick and Carey Instructional Design Model

- Willis (2000) is recursive & reflective (R2D2)
- Involves students as participants
- Multiple stakeholders are consulted (organic)



ADDIE Model

- **Analysis (learners, task, context)**
- **Design (activities, content, sequencing, assessment)**
- Development (production of materials)
- Implementation (delivery of e-resource/program)
- Evaluation (of learners and e-resource)

Iterative process (recursive and reflective)

User testing

Definition of Instructional Design

“the systematic and reflective process of translating principles of learning and instruction into plans for instructional materials, activities, information resources, and evaluation” (Smith and Ragan, 2005)

More simply put.....creating conditions for learning.

Noted: ISD 1/3 project management, 1/3 process driven, 1/3 creative

Bottom Line(s) for Instructional Designers

- “Could they demonstrate that they have achieved the learning reflected by this goal if their lives depended on it?” (Rothwell & Kazanas, 1992)
- Health care often considered high risk (*comparisons made to airline industry*)
 - Need for checklists & practice, balanced with hours of training (*not unlike pharmacy education*)

Flight Simulation Training →

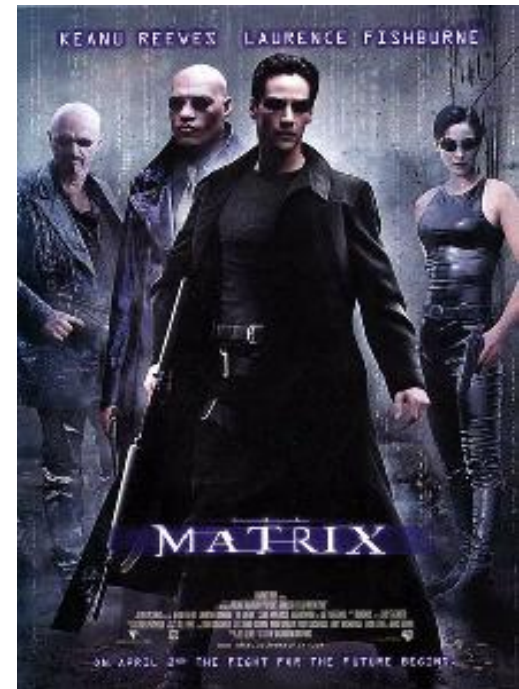


Competency Framework (Phase 2)

(From Inception to the Matrix)

- Validated Competency Framework
- Content, Theme, and Design Matrix developed

→ Harold Lopatka's original nine
Domains consolidated to 6



Content, Theme, and Design Matrix

- Evidence informed
- Based on Competency Framework
- Six Domains with topics/chapters
- Linked to CanMEDS roles
- Foundational and Advanced Topics
- Common Themes in Canadian healthcare
- Design Themes across Domains
- Prequel Domain (*includes Faculty Guide, Project Background and Program Development*)

Domain Authors

Following Call for Authors February 2013

- Neil de Haan: Information Management and Technology
– *BC Cancer Agency, University of Victoria*
- Lisa Bishop: Knowledge Management and Technology
– *Memorial University*
- Jeff Barnett: Privacy, Security, and Confidentiality
– *BC Cancer Agency, University of Victoria*
- Kelly Grindrod: Consumer Health Informatics
– *University of Waterloo*
- Jason Perepelkin: Management, Optimization and Leadership – *University of Saskatchewan*
- Marie Rocchi: Concepts and Context, Faculty Guide, Editor and Instructional Designer – *University of Toronto*

Undergraduate Student Award Winners

Participatory ID involves Students....

- Danny Wong (*University of British Columbia*)
- Jereme Parenteau (*University of Alberta*)
- Phillip Curran (*University of Saskatchewan*)
- Chelsea Barr (*University of Waterloo*)
- Patrick Monaghan (*Dalhousie University*)

...27 applicants, ratings, interviews, selection.



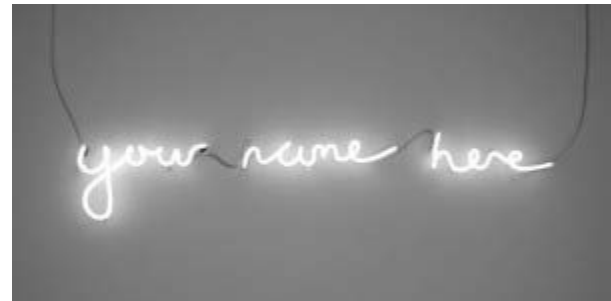
Student Roles

1. **Archivist** (version control, glossary, content management)
2. **Researcher** (content, resources, annotations)
3. **Multimedia production** (animation, video, audio, images, lecture capture)
4. **MCQs** (item writing, blueprinting with Role 14)
5. **Writing and copy-editing**
6. **Leveling & Relevance** – all
7. **Training Manuals, Faculty Support**
8. **Sys Admin** (set up, enrolling users, support)
9. **Design/build modules** (programming, author-ware)
10. **Analytics** (users, feedback, evaluation)
11. **Translation Assistance** (French)
12. **Student Engagement** (marketing, user testing)
13. **Innovation** (apps, virtual patients, e-CPS workbook, mobile health)
14. **Blueprinter** (competency framework/content/learning objectives)



Reviewers

- Terry Damm (*University of Saskatchewan*)
- Nancy Kleiman & Christine Davis (*University of Manitoba*)
- Stephanie Young (*Memorial University*)
- James McCormack (*University of British Columbia*)
- Eric Schneider (*University of Waterloo*)
- Jon Paul Marchand (*UBC*)
- Clinicians



Contributors

- Doris Nessim – Automation in Acute Care and Ambulatory Settings
- Sharon Walsh (*University of Alberta*) – Personalized Medicine
- Hilary Watson (*University of British Columbia*) – Virtual Patients and Self Care
- Danny Ho (*University of Waterloo*) – Domain 2



Activity #2: To the Matrix!

Flip charts, copies of Matrix available

Consider...from a course, division, or faculty perspective:

- Does the content reflect your educational needs? Does it fill a gap?
- Is the content forward thinking?
- Should the order and sequencing matter?
- Is anything missing? Is anything redundant?
- Are the CanMEDS roles congruent with the domains?

After the activity....the Advance Screening!



ADDIE Model

- **Analysis (learners, task, context)**
- **Design (activities, content, sequencing, assessment)**
- Development (production of materials)
- Implementation (delivery of e-resource/program)
- Evaluation (of learners and e-resource)

Iterative process (recursive and reflective)

User testing

Inspiration

<http://www.cmpa-acpm.ca/cmpapd04/docs/ela/goodpracticesguide/pages/index/index-e.html>

The screenshot shows the homepage of the CMPA Good Practices Guide. The top navigation bar includes links for 'Glossary', 'Help', and 'Français', along with a search box. The main header features the CMPA logo (The Canadian Medical Protective Association) and the title 'Good Practices Guide' with the tagline 'Safer care — reducing medico-legal risk'. Below this is a horizontal menu with tabs for 'Home', 'Patient safety', 'Teams', 'Communication', 'Managing risk', 'Human factors', 'Adverse events', and 'Professionalism'. To the right of the menu are buttons for 'Students' and 'Faculty'. Social media icons for Twitter and LinkedIn are visible. The main content area is titled 'eLearning activities' and includes a list of bullet points: 'Follow the links to special interactive case-based modules' and 'Students can earn a statement of completion'. There are also sections for 'Key concepts' (What you need to know) and 'Good practices' (What you need to do). A 'Play' button is located at the bottom right of the main content area.

Glossary | Help | Français Search

CMPA
THE CANADIAN MEDICAL
PROTECTIVE ASSOCIATION

Good Practices Guide
Safer care — reducing medico-legal risk

Home Patient safety Teams Communication Managing risk Human factors Adverse events Professionalism

Students Faculty

Twitter LinkedIn

eLearning activities

- Follow the links to special interactive case-based modules
- Students can earn a statement of completion

Key concepts
What you need to know

Good practices
What you need to do

Play

Influences

Worker's Health and WSIB (PRP 2013)



Worker's Health and WSIB

Dr. Julia Alleyne



CanMEDS Focus: Professional, Manager

Resident as Teacher (PRP 2013)



Resident as Teacher

Dr. Shobhan Vachhrajani

Dr. Eric Wong



CanMEDS Focus: Collaborator, Scholar

Common Design Elements for Domains

1. Advance Organizer (*overview, objectives, authors*)
2. Pre-Test (*multiple choice questions*)
3. **Content** (*text, images, videos, URLs*)
4. Virtual Patients, Clinicians, & Faculty
5. Case Studies, Scenarios & Worked Examples
6. Learning Activities & Faculty Guide
7. Key Points and Domain Summary
8. Post-Test
9. Unit Evaluation
10. Glossary

Tab Display, Use of Images, Text, Bullets, Ample White Space (*Cognitive Presence*)

[What is Informatics?](#)[\[Article\] Defining Informatics \(Hersh, 2009\)](#)[Health Informatics](#)[Pharmacy Informatics and the Pharmacist's Role](#)[\[Video\] Medication Use Cycle](#)[Medication Management](#)[\[PDF\] Blueprint for Pharmacy](#)

What is Informatics?

We begin with informatics. **Health informatics** (*also called bio-medical informatics*) is part of the larger and emerging discipline of informatics. This image depicts informatics as the intersection of people (*patients and healthcare providers*), systems (*technology, healthcare*), and data (*generated by research, data becomes information*). In a profession such as pharmacy, knowledge is constituted by profession-specific information and professional norms and conventions.

As an emerging area, there is considerable variation in the terminology used in informatics. The article in the next tab describes some of the current debate. *Although the article is of American origin, much of it is transferable to our Canadian context.*

```
graph TD; subgraph VennDiagram; D((Data)); P((People)); S((Systems)); I[Informatics]; end; D --- I; P --- I; S --- I; I --> D2[Data]; I --> I2[Information]; I --> K2[Knowledge]; D2 --> I2; I2 --> K2;
```

Reading/Article Embedded (*Cognitive Presence*)

[What is Informatics?](#) [\[Article\] Defining Informatics \(Hersh, 2009\)](#) [Health Informatics](#) [Pharmacy Informatics and the Pharmacist's Role](#)

[\[Video\] Medication Use Cycle](#) [Medication Management](#) [\[PDF\] Blueprint for Pharmacy](#)

Advanced search

[Home](#) [Articles](#) [Authors](#) [Reviewers](#) [About this journal](#) [My BMC Medical Informatics and Decision Making](#)

[Top](#)
[Abstract](#)
[Background](#)
[Discussion](#)
[Summary](#)
[Abbreviations](#)
[Competing interests](#)
[Authors' contributions](#)
[Acknowledgements](#)
[References](#)
[Pre-publication history](#)

Debate **Highly accessed** [Open Access](#)

A stimulus to define informatics and health information technology

William Hersh

Correspondence: William Hersh hersh@ohsu.edu

▼ Author Affiliations

Department of Medical Informatics & Clinical Epidemiology, Oregon Health & Science University, Portland, OR, USA

BMC Medical Informatics and Decision Making 2009, **9**:24 doi:10.1186/1472-6947-9-24

The electronic version of this article is the complete one and can be found online at:
<http://www.biomedcentral.com/1472-6947/9/24>

Received: 6 April 2009
Accepted: 15 May 2009
Published: 15 May 2009

© 2009 Hersh; licensee BioMed Central Ltd.

This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/2.0>), which permits unrestricted use, distribution,

BMC Medical Informatics and Decision Making
Volume 9

Viewing options
[Abstract](#)
Full text
[PDF \(885KB\)](#)

Associated material
[PubMed record](#)
[About this article](#)
[Readers' comments](#)
[Pre-publication history](#)

Related literature
[Cited by](#)
[Google blog search](#)
[Other articles by authors](#)
► [on Google Scholar](#)
► [on PubMed](#)
[Related articles/pages](#)
[on Google](#)
[on Google Scholar](#)

ADVERTISEMENT

Find related

Embedded Videos and URLs (*Cognitive Presence using credible Multi-Media Learning Objects*)

CHI-v1 ► Domain 1 Prototype ► Activity 1: Canada Health Infoway Video

Activity 1 (Video)

From Canada Health Infoway's Home Page, watch this short video to hear experiences and perspectives of patients, clinicians, and health care administrators on the journey to better care through improved connection and access to health information:
<http://www.infoway-inforoute.ca/>



Key Points: This video provides a quick snapshot of the benefits of Electronic Health Records. We'll soon see that patient records are an important aspect of [pharmacy informatics](#). Throughout the program, we'll revisit and explore this website regularly, and you will begin to appreciate the complexity of this emerging area.

Last modified: Saturday, 29 December 2012, 9:07 PM

Lecture Capture (*Teaching Presence*)

[What is Informatics?](#) [\[Article\] Defining Informatics \(Hersh, 2009\)](#) [Health Informatics](#) [Pharmacy Informatics and the Pharmacist's Role](#)

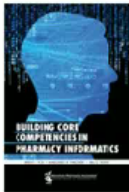
[\[Video\] Medication Use Cycle](#) [Medication Management](#) [\[PDF\] Blueprint for Pharmacy](#)

[HOME](#) | [HOURS](#) | [LIBRARIES](#) | [SITE MAP](#) | [CONTACT US](#)

[About MyMedia](#) [Help](#)

Pharmacy Informatics

- Pharmacy practice is an information based science
- We gather, synthesize, and act on information
- Two broad categories of information in clinical informatics: patient-specific and knowledge-based
- Our course will consider these two aspects



1

Inspiration – RNAO e-Health for Every Nurse & At the Point of Care (*Book Display*)

[Introduction](#) › [Modules Selection](#) ›

This course is comprised of three modules:

Module 1:

Nursing & Mobile Technology Basics

- This module describes why mobile technology is important for nurses. It also covers the basic functionality of the BlackBerry, iPhone, Tablet PC and Windows Mobile Classic (formerly called the Pocket PC).

[Start Now!](#)

Module 2:

Integrating Mobile Technology in Nursing

- This module reviews strategies to incorporate mobile technology in various health care sectors.

[Start Now!](#)

Module 3:

Mobile Technology & Client Education

- This module highlights innovative ways that nurses can use mobile technology to enhance client education.

[Start Now!](#)

Common Elements for Domains & Chapters

1. **Advance Organizer** (*overview, objectives, authors*)
2. Pre-Test (*multiple choice questions*)
3. Content (*text, images, videos, URLs*)
4. Virtual Patients, Clinicians, & Faculty
5. Case Studies, Scenarios & Worked Examples
6. Learning Activities & Faculty Guide
7. Key Points and Domain Summary
8. Post-Test
9. Unit Evaluation
10. **Glossary**

Enabled Glossary provides “just in time” leaning and reinforcement of concepts (van Merriënboer, 2001)

Domain 1 Prototype

Welcome to Domain 1, the first module in the online educational resource for **Pharmacy Clinicians in Training**. This first introductory module is intended to:

- Familiarize you with the **online learning environment** and its various functions
- Firmly ground you in core concepts, principles, definitions, and frameworks in **Pharmacy Informatics**
- Orient you to the context of the program, including **key themes** that will be woven into the program

The learning management system is designed to be navigated with ease.

To get
order th

Pharmacy Informatics

in the

Use and integration of data, information, knowledge, technology, and automation in the medication use process for the purpose of improving health outcomes.

Building Core Competencies in Pharmacy Informatics, APhA 2010

Ok

Lea
At t

- health care as a platform for integrated, collaborative, patient-centred care
- Understand the need for interoperability of health records and data exchange and its impact on collaborative patient centered care
- Describe the role of the pharmacist in health informatics

Common Elements for Domains & Chapters

1. Advance Organizer (*overview, objectives, authors*)
2. Pre-Test (*multiple choice questions*)
3. Content (*text, images, videos, URLs*)
4. Virtual Patients, Clinicians, & Faculty
5. Case Studies, Scenarios & Worked Examples
6. Learning Activities & Faculty Guide
7. Key Points and Domain Summary
- 8. Post-Test**
9. Unit Evaluation
10. Glossary

Results Tracked in LMS Analytics

CHI-v1 ► Domain 1 Prototype ► Activity 4: Self-Test Domain 1 ► Preview

Question 1
Not complete
Marked out of 1.00
Flag question
Edit question

The primary goal of health informatics is:

Select one:

- ☐ a. increased access to information
- ☐ b. improved patient outcomes
- ☐ c. enhanced collaboration between healthcare professionals
- ☐ d. evidence based medicine
- ☐ e. informed decision making

Check

Question 2
Not complete
Marked out of 1.00
Flag question
Edit question









Pharmacy informatics concerns itself with:

Select one:







- ☐ a. translating information for patients
- ☐ b. interoperability of computer networks and systems
- ☐ c. creating patient records
- ☐ d. a and c
- ☐ e. a and b and c

Modular, Scalable, and Interactive Functions (Icons)




Starting Point

- ? [Your University - Step on the Map!](#)
-  [Activity 1: Canada Health Infoway Video](#)
- [Activity 2: Virtual Students and Patients](#)
-  [MD Case](#)
-  [JT Case](#)
-  [SW Case](#)
-  [DW Case](#)
-  [Terren Case](#)
-  [Activity 3: Foundational Pre-requisites](#)
-  [Chatting in Real Time](#)

Pharmacy and Informatics

-  [Activity 4: Self-Test Domain 1](#)
-  [Pharmacy & Informatics](#)
-  [Activity 5: Create Your Own Definition](#)
-  [Activity 6: Explore the Pharmacy Informatics Glossary](#)
-  [Glossary Drag and Drop Quiz](#)
-  [Activity 7: Core Concepts Facilitated Discussion Forum](#)

Context and Key Themes

-  [Influences and Key Themes](#)
-  [Activity 8: Self Assessment of Knowledge Gain](#)
-  [Activity 9: Unit Evaluation](#)

Topic 2

Common Elements for Domains & Chapters

1. Advance Organizer (*overview, objectives, authors*)
2. Pre-Test (*multiple choice questions*)
3. Content (*text, images, videos, URLs*)
4. **Virtual Patients, Clinicians, & Faculty**
5. Case Studies, Scenarios & Worked Examples
6. Learning Activities & Faculty Guide
7. Key Points and Domain Summary
8. Post-Test
9. Unit Evaluation
10. Glossary



Instructional Analysis

(involves asking questions)

- Environment (school, work, home)
- Task (new information, skills)
- Setting (context of application)
- Attitudes, time, learner characteristics
- Prior knowledge/experience

Two Towers

Observation vs. Telecommunications



Analysis – Learners

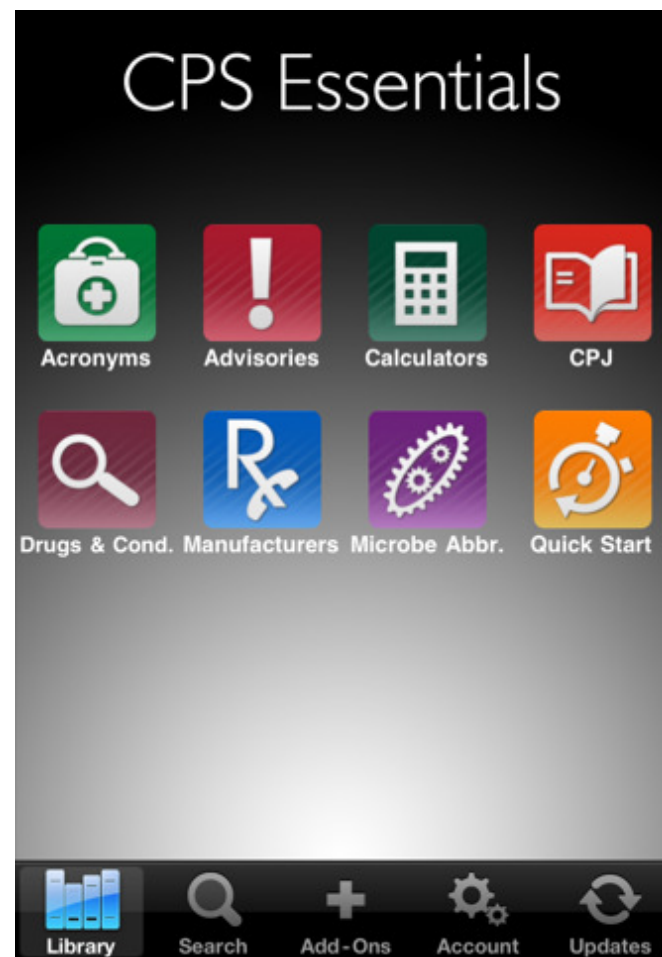
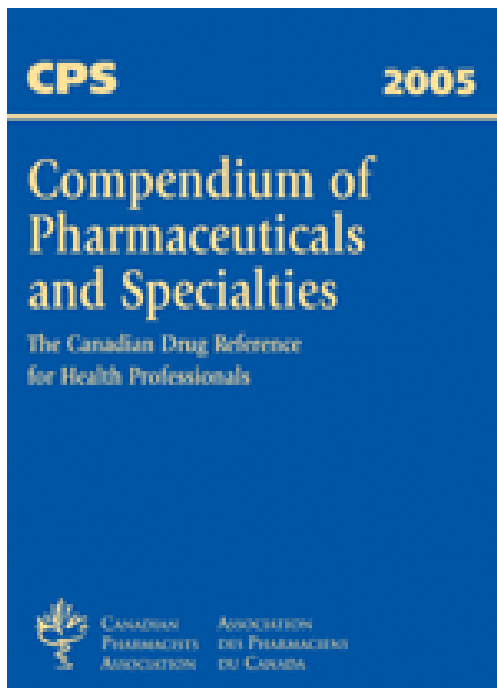
- Digital natives (Marc Prensky) – *“Don’t bother me Mom, I’m learning”*
- Computer literacy → foundational pre-requisites
- Health Information literacy
 - Health science students had difficulty discerning primary from secondary sources, using Boolean operators (Stellefson, 2012)
 - Hayward (Alberta) has developed curriculum
 - HIL = Informational knowledge, attitudes, skills required for safe, effective, collaborative healthcare practice in a digital workplace

Things a Digital Native has said to me...



1. That's too much phone for you
 2. I'm having a Skype beer with Daniel
 3. My generation knows more about privacy settings than yours
- ← *Facebook page with caption "attempting adulthood"*

RIP Monographs...



Without Prejudice

Learner analysis means not judging them but considering conditions for learning

- The information assaulted me!
- I don't want to look at a computer screen for information – I'd rather see it on a small screen, like my phone.

Burnette (2011) online elective course in MI – students found readings dry and redundant but appreciated flexibility of asynchronous & self-paced format - learners “were pleasantly surprised” & elective filled void

A laptop is shown in the top left corner, displaying a network diagram. The background of the slide features a light blue hexagonal pattern and a faint network diagram.

Health Information Literacy

HIL Competencies

Healthcare decision-makers must:

1. Access to relevant information rapidly.
2. Be able to discern better from worse information.
3. Manage applicable information in support of best practices.



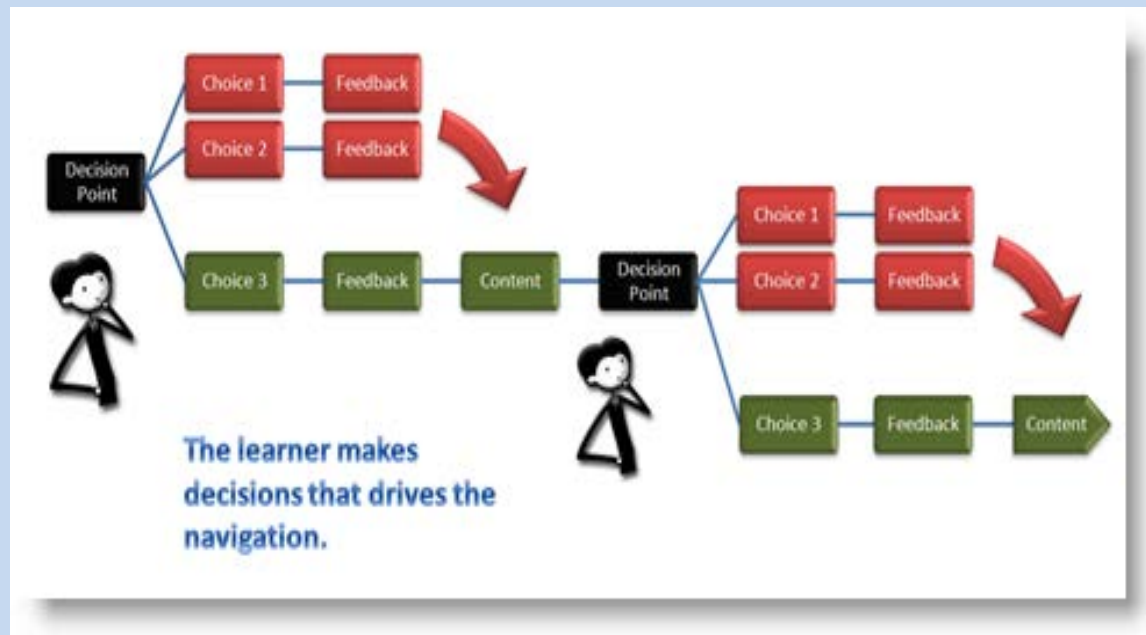
Virtual Patients (1)

- Used extensively in medical education
- Rich learning resources encourage medical students to interact and learn deeply (Cook, 2008)
- Low fidelity (*vs. high fidelity e.g. SPs*)
- Model decision making & enhance development of mental models (*novices vs. experts*)
- Templates adversely impact maturation of the decision-making process and development of skills (Mintz et al, 2009)


VPs 2

- Four Generations:
 1. linear
 2. branching and linking
 3. immersive, full multi-media
 4. scenario based, modular, integrated
- Use in pharmacy education in North America quite limited
- Virtual Clinicians, Virtual Faculty, Virtual Students?

Decision Making Logic *(Storyboarding Cases)*



Inspiration (AFMC VP Challenge)

Presenting Complaint			Diagnosis & Management		
Patient History	Functional Inquiry	Physical Examination	Diagnostic Tests	Diagnostic Imaging	Consultation
<p>Identifying Information</p> <p>History of Presenting Illness</p> <p>Past Medical History</p> <p>Family History</p> <p>Psychosocial History</p> <p>Medications</p>	<p>al Interactive Case (VIC) Player. Please begin by complaint to your right. When you are finished, examination by clicking on the options in the patient ve.</p> <p>y and review of systems, and conduct a physical patient and cost-effective way to reach a diagnosis.</p> <p>Each action you take will add to the time and cost of arriving at the diagnosis. The essential actions to discover the pertinent findings will contribute to a score which reflects your success in assessing all the pertinent findings. Points will be deducted for essential actions that you miss.</p> <p>When you feel confident that you have reached a diagnosis, finish the case by clicking on Diagnosis & Management above.</p>		 <p>Mrs. P is concerned about being very tired for over a year. You notice, as she slowly (and with a bit of effort) walks into your office, that she is a mildly obese woman with obvious pallor.</p> <p>She has applied to have you as her family physician. You ask her permission to contact another physician she used to see and obtain any health records.</p>		

AFMC Neuroscience of Addictions

<http://emodules.med.utoronto.ca/addiction/>



AFMC

The Association of Faculties
of Medicine of Canada


Addiction e-Learning for Undergraduate Medical Education (UME)

Introduction

[Click to expand/collapse section](#)

A Short Introduction to Addiction as a Family Disease

[Click to expand/collapse section](#)

Click on each character to open up a  virtual patient case to learn about addiction as a family disease.

Index Case & 4 Family Members

4C/ID Model of Supportive Information

Authentic Practice Cases

The screenshot displays a virtual patient case interface. At the top, there is a navigation bar with tabs: Overview, History, Physical, Investigation, Diagnosis, Management, and Follow Up. The 'History' tab is selected. Below the navigation bar, the 'History of Present Illness' section is visible. On the left, there is a list of questions to ask the patient: 'What can I do for you?', 'Can you let me know what happened?', 'Can you tell me when she has been completely well?', 'When did things start getting worse?', 'Does Miriam smoke anything else other than cigarettes?', 'Has Miriam ever been drunk before?', and 'What about other drugs?'. A 'More...' button is at the bottom of this list. On the right, the patient's history is displayed: 'She was fine until about two years ago when she was 13. Once she hit puberty she began to get mouthy but nothing too bad. We noticed she had begun smoking cigarettes but nothing else.' Below this text, there is a cartoon illustration of a woman and a man. A 'Notes' box at the bottom right contains the text: 'From CDC: "Smoking and smokeless tobacco use are initiated and established primarily during adolescence. More than 80% of adult smokers begin smoking before 18 years of age."'.

The screenshot displays the 'Ashley' virtual patient case interface. At the top right, the name 'Ashley' is displayed. Below the name, there is a text prompt: 'Click on each diagram to open up a virtual patient case to assess your clinical reasoning skills.' Below this prompt, there is a grid of eight diagrams, each representing a different case. The cases are labeled as follows: Case 1: Female, 74; Case 2: Female, 45; Case 3: Female, 35; Case 4: Male, 9; Case 5: Male, 15; Case 6: Male, 32; Case 7: Male, 48; and Case 8: Male, 60. Each diagram shows a different clinical scenario involving a patient and a healthcare professional.

Meet AFPC's VP

Case of Terren

Patient Info


Patient History


Medical History

Patient Workup

Key Points

Follow-Up?



 View Prescription

Case of Terren

Terren is a 35-year-old high school teacher who is a regular patient at your pharmacy. She explains to you today that after she and her family moved into their new home, which is being renovated, she has been sneezing all the time.

She is also dropping off a new prescription she got today from her doctor.

Pharmacy Specific Context

Case of Terren

Patient History

What are your symptoms?

When did you first notice the symptoms?

Do you have any existing allergies?

Are you experiencing any other symptoms?

Have you tried anything for your symptoms?

How bothersome are your symptoms?

Do you have any questions or concerns?

I am sneezing all the time, and my nose is running.


History of Presenting Illness

Family History

Social History



Interoperability Patient Case






M.D.'s experience is an example of:



- ☐ Adverse event
- ☐ Cohesive delivery of care
- ☐ Inconvenience to patient
- ☐ Integration of systems across services
- ☐ Inter-departmental collaboration

< PREV SUBMIT

Influences



Navigation  

Settings  

- ▼ Tab Administration
 - Edit settings
 - Locally assigned roles
 - Permissions
 - Check permissions
 - Filters
 - Logs
 - Backup

Disasters and Emergencies

Hazard Identification and Risk Assessment

HIRA: Municipalities


HIRA: Hospitals

HIRA: Probability, Impact, and Risk Ranking

Disasters and Emergencies

Introduction

Health emergencies are closer to home and more frequent than we might think. The first two events shown below had a significant impact on health care delivery.



Year	Event
2003	In 2003 Toronto experienced SARS, and a 3-day power failure
2005	In 2005, an Air France Jet made a crash landing at Pearson airport
2008	In 2008, a major propane explosion occurred near a residential region
2009	At the time this course was developed (October 2009), we were in the second

Flashcards


Serious games in higher education

[Home](#) ► [My courses](#) ► [AHLS-providerChem](#) ► [Flash Cards](#) ► Flashcards- Key Concepts (Chapter 6) [Update this Flash Card Set](#)

[Leitner play](#) [Free play](#) [Summary](#) [Edit the cards](#) [Import](#)


Hard set

Remains : 9 card(s)



Easy set

Remains : 8 card(s)



Flashcards

[Leitner play](#) [Free play](#) [Summary](#) [Edit the cards](#) [Import](#)

Flashcards- Key Concepts (Chapter 6)

Click on the flashcard to turn it over and see the other side

What is **toxicokinetics**?

List the four (4) main aspects of **toxicokinetics**.

Cards Remaining: 9

[I got it !](#)
[I missed !](#)
[Reset cardset](#)

[Back to the deck table - Back to course](#)

[Leitner play](#) [Free play](#) [Summary](#) [Edit the cards](#) [Import](#)

Flashcards- Key Concepts (Chapter 6)

Click on the flashcard to turn it over and see the other side

Toxicokinetics is "*what the body does to a poison*".

The four (4) main aspects are:

1. **Absorption** - the body absorbs it
2. **Distribution** - the body absorbs it
3. **Catabolism** - degradative metabolism
4. **Elimination** - eliminates it from the body

Cards Remaining: 9

[I got it !](#)
[I missed !](#)
[Reset cardset](#)

Conference Theme: Innovation

1. Inception
2. Input → Engagement
3. Informatics
4. Instructional Design → Participatory
5. Inspiration
6. Influences
- 7. Incubator**
- 8. Interactive**
- 9. Imprimatur**

Analysis – Context

- End users are both faculty members and students
- Acceptability/access/use by students and faculty are equally important
- Desirable attributes:
 - a) Usable in its entirety as a cohesive program
 - b) Usable as discrete modules within courses or streams
 - c) Combination of a and b → rationalized by each school
 - d) For inter-institutional collaboration
- Other potential audiences: pharmacists, pharmacy technicians, & other CITs (medicine, nursing, PTs)

Activity #3 – Exploring Conditions for Use within Faculties

1. In its entirety? e.g. pre-experiential boot-camp? (*James McCormack, also offered by Olavo Fernandes*)
 2. Embedded in courses?
 3. As an Elective?
 4. Combination of the above?
- Tracking of results (*participation, formative or summative?*)
 - Compatibility with institutional LMSs
 - Type of interactivity:
 1. Student/Content
 2. Student/Instructor (online or F2F)
 3. Student/Student



Choosing an LMS – Environmental Scan

School	Learning Management System
University of British Columbia	Blackboard Connect (in transition from WebCT)
University of Alberta	Moodle (in transition from Web CT)
University of Saskatchewan	Blackboard
University of Manitoba	Desire2Learn (in transition from Angel)
University of Waterloo	Desire2Learn (from Angel)
University of Toronto	Blackboard (some Moodle)
Laval University	ENA (environnement numérique d'apprentissage)
University of Montreal	Web CT
Dalhousie University	Blackboard
Memorial University	Desire2Learn

Choosing an LMS – Environmental Scan

- All faculties have converted from one system to another → natural evolution
- Educational technology decisions a function of institution's IT plan, resources, pedagogical orientation (Bates, 2003)
- “Digital divide”: between students and faculty members found in both DE literature and project literature review
- No pan-Canadian solution exists
- Nature of project is unique and solution may be a departure from the norm
- Open Source solution – Moodle (modular object-oriented dynamic learning environment)

Implementation Challenges Foreseen

- Technical issues (access by learners)
- Support issues (for faculty, learners)
- Each Faculty's approach
- Each course's approach (relative to nature of material and skill development)
- Anticipating numbers of learners
- Classroom vs. Online vs. Experiential
- Training/sharing with preceptors

e-Resource Development

- Collective action by a community
- Members enlisted
- Ambitious project
- Necessary and unique
- Reciprocal opportunity for each member or program to contribute and use

This is the definition of ...

Barn Raising

Modern Day Equivalent: Habitat for Humanity








- One or more people with prior experience or with specific skills are chosen to lead the project.
- Most barn raisings were accomplished in June and July when the mostly agrarian society members had time
- Timber for the framing was mostly produced in the winter by the farmer and his crew



City of Toronto Archives

Project Workspace

[Add a new discussion topic](#)

Discussion	Started by	Replies	Last post
CHI Videos	 Chelsea Barr	0	Chelsea Barr Thu, 16 May 2013, 1:19 PM
Patrick's Contributions: LMS User Analysis & Translation	 Marie Rocchi	0	Marie Rocchi Sun, 5 May 2013, 9:55 AM
Jereme's Contribution - Content Tree	 Marie Rocchi	0	Marie Rocchi Sun, 5 May 2013, 9:23 AM
Virtual Patients	 Danny Wong	2	Marie Rocchi Sun, 5 May 2013, 7:54 AM
Our Next VP - Eva	 Marie Rocchi	0	Marie Rocchi Sat, 4 May 2013, 5:38 PM
e-CPS Workbook	 Marie Rocchi	0	Marie Rocchi Sat, 4 May 2013, 4:29 PM
Online glossary and VP storyboarding	 Chelsea Barr	0	Chelsea Barr Thu, 25 Apr 2013, 9:30 AM

NAPRA's section -

http://www.napra.org/pages/Practice_Resources/pharmacy_care_plans.aspx


It would be a good idea to review it and perhaps anything that is noteworthy?

I also suspect that the provincial associations' information could differ from that of each PRA so - to be thorough - I'd suggest a quick run there. I know that's certainly the case in Ontario!

Thanks again - enjoying the updates very much :)

- Marie

[Show parent](#) | [Edit](#) | [Split](#) | [Delete](#) | [Reply](#)

 **Re: Domain 3: Knowledge Management and Technology**
by [Phillip Curran](#) - Thursday, 9 May 2013, 9:13 PM

With my initial search through association websites was that most have members only areas and keep their clinical tools closed off from general access.

I took another run through today. Ontario does indeed have of good resources! BC had a few tools as well. All other provinces were unfortunately locked off from my viewing. Quebec once again looks like it has a well developed site but my language skills prevent me from investigating too deeply.

I didn't look at the page of NAPRA exactly. It links into a few pages that I posted with my more "national" focused post.

Overview [Site] AFPC Project Announcement [Site] Clinicians in Training: Canada Health Infoway

Advisory Committee and Stakeholders Development Process Use of Resource (Faculty/Students)

Competency Framework for APFC [PDF] Competency Framework Content, Theme, and Design Matrix [PDF] Matrix

Competency Schema

Pan-Canadian Project: Association of Faculties of Pharmacy of Canada & Canada Health Infoway Resource

The Association of Faculties of Pharmacy of Canada (AFPC) received a Canada Health Infoway grant to develop a national, online, competency based, educational program to help prepare undergraduate pharmacy students in optimizing the use of Information and Communication Technologies (ICT).

This educational program addresses an important, identified need in pharmacy degree programs across Canada. Against a backdrop of the evolving and expanding scope of pharmacy practice in all provinces, increasing complexity surrounds the use and application of ICTs in practice; there are a very limited number of Faculty members with expertise in this developing area, and few courses offered in this subject.

As a result, we have undertaken the development of a comprehensive, current, and relevant educational program (consisting of sequenced array of resources, tools, aids, assessments, and materials) that will be offered to educators in pharmacy schools across Canada for incorporation into their respective courses and programs of study.

Coming Soon to an LMS Near You



AFPC_640.360_v3.mp4

Incubator for Innovation

Guiding Principles for e-Resource

- Intellectual integrity preserved
- Acknowledgement of scholarly contributions
- Instructional Voice (*to minimize transactional distance*)
- Authenticity and application
- Relevance of material for all pharmacy students across Canada
- Foundational level; unifying themes
- Various audiences

Canadian Health Education Commons

<https://chec-cesc.afmc.ca/>

The screenshot shows the homepage of the Canadian Health Education Commons (CHEC-CESC). The header includes navigation links for Home, Contact Us, and Français. The main banner features the CHEC-CESC logo, a circular seal of the Association of Faculties of Medicine of Canada, and a large white arrow pointing right towards the 'CHEC-CESC Virtual Patient Challenge' and 'Défi Patients virtuels de la CHEC-CESC'. Below the banner is a red navigation bar with links for About us, Communities, Library, Blogs, Collections, and FAQ, along with a search bar. The main content area is divided into two columns. The left column has a 'Welcome' section with text about the organization's mission and a 'Be a part of the community!' link. The right column features a 'User Login' section with fields for Username and Password, a 'Log in' button, and links for 'Create new account' and 'Request new password'. Below these columns is a section titled 'Future of Medical Education in Canada (FMEC)' with a dropdown menu for 'Communities' and a search bar.

Home | Contact Us | Français

CHEC-CESC
Canadian Healthcare Education Commons
Collaboration pour l'éducation en santé au Canada

CHEC-CESC Virtual Patient Challenge
Défi Patients virtuels de la CHEC-CESC

About us | Communities | Library | Blogs | Collections | FAQ

Search this site:

Welcome

The Canadian Healthcare Education Commons - La collaboration pour l'éducation en santé au Canada (CHEC-CESC) is a national, healthcare education commons.

The CHEC-CESC Commons is a place to support collaborative learning and teaching for the health professions. Members can interact, share, and create resources in a secure and simple online environment.

Be a part of the community!

User Login

Username: *

Password: *

[Create new account](#)

[Request new password](#)

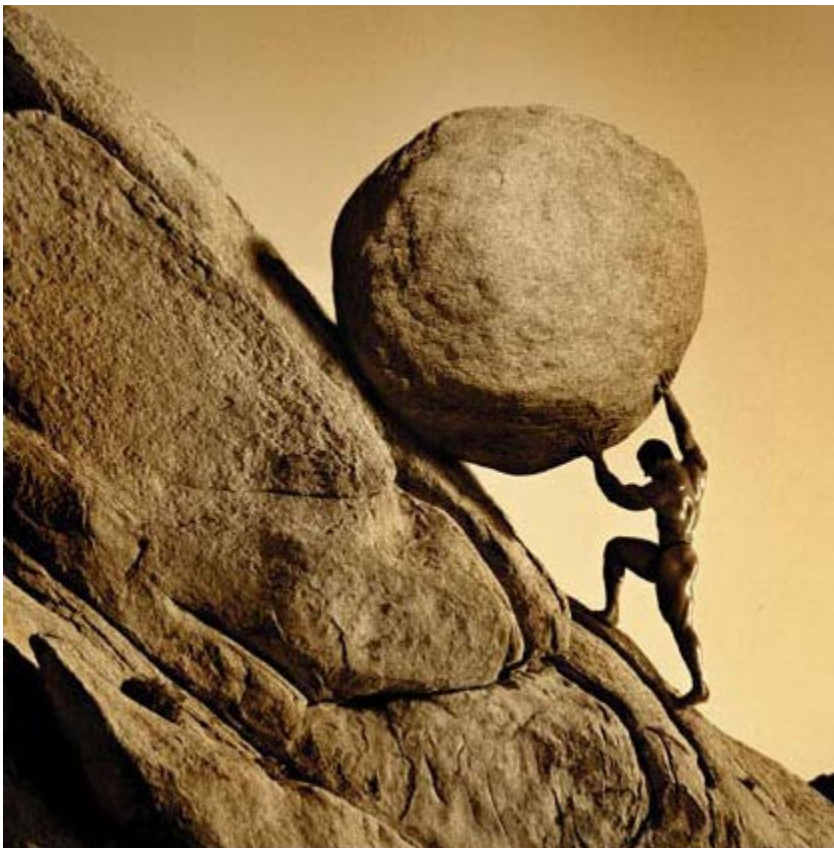
Future of Medical Education in Canada (FMEC) - 10 new online communities have been created to help mobilize action and share resources pertaining to the FMEC collective Vision. Please join a community that interests you:

Communities

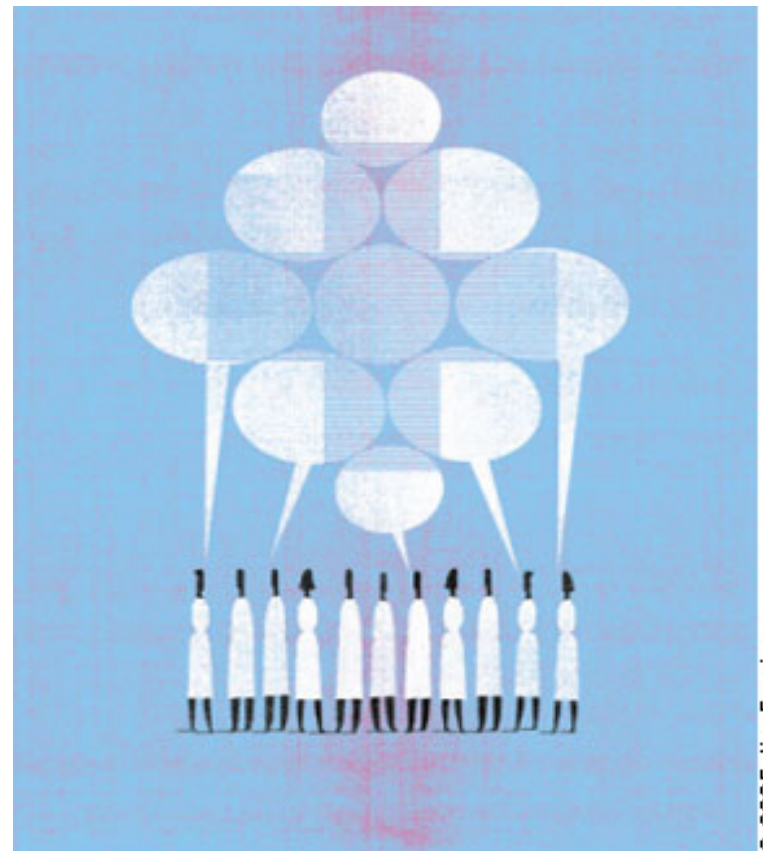
<https://chec-cesc.afmc.ca/>

Imagining the Online Resource as Supporting Learning and Teaching

Sisyphean Task



Community of Practice



Conclusion

You are invited to join the collaborative

- Contribute
- Review
- User-testing
- Utilize
- Evaluate



Please contact: marie.rocchi@utoronto.ca

Contact Information

- Harold Lopatka, AFPC Executive Director
email: hlopatka@telus.net
- Donna Pipa, Pharmacists in Training Project Manager
email: pipa@telus.net

For additional information about project see summary on AFPC website:

<http://www.afpc.info/content.php?SectionID=4&ContentID=165&Language=en>



Online Learning: A Definition

“the use of the Internet to access learning materials; to interact with the content, instructor, and other learners; and to obtain support during the learning process, in order to acquire knowledge, to construct personal meaning, and to grow from the learning experience” *Ally, 2008*

- *Also referred to as “computer mediated instruction”*
- *Other key terms:*
 1. *Distance Education (implies a remove by space and time)*
 2. *Hybrid Approach (classroom and online)*
 3. *Synchronous and Asynchronous*

Key Principles

Principle 1: Congruence between objectives, activities and assessment

Principle 2: Advocacy of the learner as focus of instruction

Principle 3: Supports effective, efficient and appealing instruction

Common Concerns with Distance Education

- Engagement of learners, including yourself
- Face-to -face is more familiar, much more experience with 1:1, small group, large class size
- Past experience: not enough structure in discussion forums or the course material

Instructional Strategy Selection

- Content (size of segments, embedded activities or lecture)
- Activities (supplement or primary means, read, discuss, do)
- Sequence (expository or discovery)
- Media, group or individual activities

Transactional Distance

- Refers to psychological and communication distance between learner, peers, content, and instructors in distance education settings (Moore, 1980)
- Relationship to structure and dialogue (as one increases, the other decreases; getting the balance right is the holy grail of online instructional design)
- Degree of learner autonomy/control is important (ability to move ahead without course content being unavailable, or interact with content at own pace)