



# **Pharmacy Informatics Pharmacy Educator Peer Leader Network Update**

H. Lopatka, CPERC 2016



# Background

- Canada Health Infoway 2014-15 Annual Report
- Survey of Canadian community pharmacists: Use of digital health technologies in practice – August 2014 (CPhA, Infoway)
- Pharmacists-in-training project – July 2011 - March 2014
  - Competencies, e-resource
- Pharmacy Educator Peer Leader Network (PEPLN) project – June 2014 – March 2016
  - Network, e-resource use, PEPLN Internal evaluation report – March 2016

# Highlights from 2014-2015

More than

**91,000  
clinicians**

are now using an electronic health record (EHR).



In December of 2014, the National Physician Survey reported that

**77 per cent**

of family doctors are now using an electronic medical record (EMR).

More than

**500,000  
British Columbians**

can now access their lab results online.



Infoway's *Better Health Together* public education campaign was heard, read or seen

**178  
million**

times during the year.



There were more than

**71 million**

uses of digital technology that connected patients with their clinicians and clinicians with each other as a result of the *ImagineNation e-Connect Impact Challenge*.



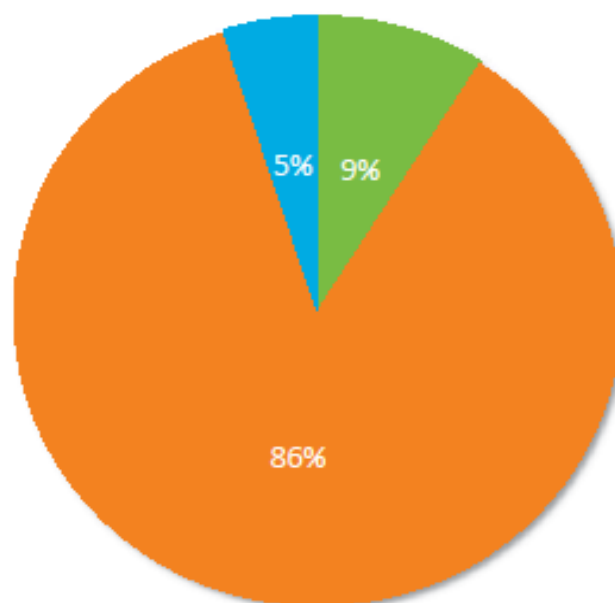
Infoway and the Health Information Privacy Group we sponsor received the

**2014 Innovation Award**

for small organizations from the International Association of Privacy Professionals.

## Majority practice in a paper and electronic combination setting

Q4. Thinking about your MAIN practice setting, which of these describes the patient record keeping system that you use? *Please check ONLY ONE*



■ Electronic INSTEAD of paper

■ Combination paper and electronic

■ Paper only

Base: All respondents (n=447)

Commissioned by



CANADIAN  
PHARMACEUTICAL  
ASSOCIATION

ASSOCIATION DES  
PHARMACIENS  
DU QUÉBEC



Canada  
Health  
Infoway

Infoparc  
Santé  
du Canada

7

**harrisdecima**  
A HARRIS INTERACTIVE COMPANY

## Access and use of specific functionality

	I used this on...						
	A Pharmacy practice management system (Kroll, Telus, ProPharm, Rx-PRO etc...)	Another software program	mobile device (smartphone or tablet)	This is available but I do not have access	This is not available – I would like to have this	This is not available – I would not like to have this	Don't Know/ Not sure
Electronic reminders for recommended patient care (e.g. follow-up of care, monitoring, med reviews, immunizations)	78%	7%	6%	4%	11%	0%	4%
CPhA e-Therapeutics+/eCPS electronic clinical decision support tool	52%	42%	22%	2%	5%	1%	4%
Electronic clinical decision support tool (e.g. Rx Files, e-Pocrates, Lexicomp, etc.)	36%	45%	36%	2%	8%	1%	3%
Electronic list of all medications taken by an individual patient (accessible through a provincial/territorial drug information system)	53%	17%	0%	5%	26%	1%	3%
Electronic warning for adverse drug interactions or contraindications	96%	24%	15%	0%	1%	0%	0%
Electronic access to laboratory test results (available through provincial/territorial information systems)	6%	18%	0%	4%	64%	6%	4%
Electronic transfer of clinical/patient medical information securely to/from other health professionals (by a direct internet based connection)	17%	6%	0%	2%	65%	7%	4%

Base: All respondents (n=447)

Commissioned by



CANADIAN PHARMACISTS ASSOCIATION  
ASSOCIATION DES PHARMACIENS DU CANADA



Canada  
Health  
Infinivie  
Santé  
du Canada



# Landing Page

<http://afpc-education.info/moodle/>

The screenshot shows a web browser window with the address bar displaying [afpc-education.info/moodle/](http://afpc-education.info/moodle/). The page header includes the title "Informatics for Pharmacy Students" and "E-RESOURCE". A navigation bar contains links for "Student e-Resources", "Faculty e-Resources", and "Guest e-Resources", along with a login status "You are logged in as Marie Rocchi (Logout)".

The main content area features the title "Competency Based e-Resource" and a description: "Organized by Domain ---- Engaging Learning Activities ---- Innovative Virtual Patients ---- Modular, Flexible & Comprehensive". A list of domains is provided:

- Domain 1: Concepts and Context in Pharmacy Informatics
- Domain 2: Information Management and Technology
- Domain 3: Knowledge Management and Technology
- Domain 4: Privacy, Security, and Confidentiality
- Domain 5: Consumer Health Informatics
- Domain 6: Management, Optimization, & Leadership (in development)

Below the main content, there are three boxes for access:

- Student e-Resources:** Access to Domains 1, 2, 3, 4 & 5. Button: Here
- Faculty e-Resources:** Peer Leader Network - Members Only. Button: Here
- Guest e-Resources:** If you would like access, please email [marie.rocchi@utoronto.ca](mailto:marie.rocchi@utoronto.ca). Button: Here

The footer includes a "WELCOME" message and a "HOW TO USE THIS E-RESOURCE" link.



# Pharmacy Educator Peer Leader Network (PEPLN)

## Purpose

- Build on the success of development of the Informatics for Pharmacy Students e-Resource
- Facilitate integration of the e-Resource into pharmacy undergraduate curriculum
  - support integration of Infoway's Consumer Health priorities (e.g. e-visits, e-refills)



# PEPLN Results

- Eight peer leaders (from 8/10 faculties) participated in the full project.
- Over one half of the pharmacy students enrolled in faculties used the e-resource.
- The network, PEPLN, created conditions considered essential to produce a collective impact.
- Thirty four local integration projects were conducted in a 1 year period.





## PEPLN Results (cont'd)

- Integration activities were conducted in seven different types of courses with pharmacy skills labs being the most frequent.
- The most common learning activity was pre-reading for labs or lectures.
- A number of non-course integration activities occurred.
- Twenty integration best practices were identified.



## PEPLN Results (Cont'd)

- Overall results illustrated that version 1 of the e-resource was a useful and valuable tool for integrating important concepts and principles about digital and e-health into pharmacy curricula.
- Twelve major and ten minor changes to version 1 of the resource were made to improve access / use, navigation / layout, and specific learning / teaching activities.
- Version 2 of the e-resource available May 2016.



# PEPLN Example

- You are a manager of a small, independent community pharmacy, practicing with APA. You have a regular patient in your community pharmacy, Mr. Alfred McPherson (63 year old male). Mr. McPherson is a very proactive, technologically advanced patient. He has developed a personal electronic health record and is happy to provide you with the information he has from his doctor's office and your pharmacy. The information below reflects what you have been able to collect from these sources, along with the provincial EHR. He has just emailed you that he needs refills on his amlodipine, HCTZ and simvastatin.



# PEPLN Example (cont'd)

- Is it appropriate Mr. MacPherson emails you his prescription refills? Why or why not?
- In what ways could your pharmacy help meet Mr. MacPherson's eHealth needs?
- Describe the main patient related concerns regarding eHealth and in particular EHRs?



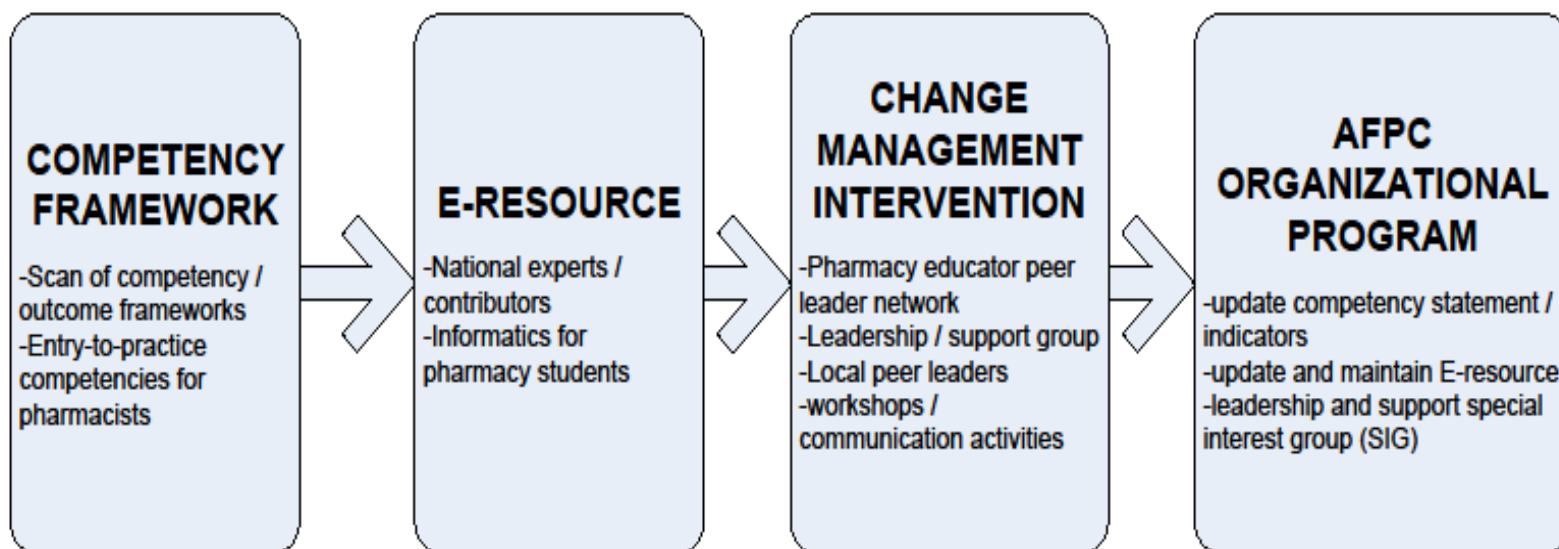
# PEPLN Recommendations

- A peer leader skills development boot camp / workshop should be conducted...
- A targeted approach ... The focus should be peer leaders and faculty with teaching interests in pharmacy skills labs, experiential education, pharmacy practice, and informatics ...
- Current pharmacy curricula should be mapped against the AFPC informatics competencies (gap analysis)...
- Initiate a process for e-Resource content revisions. Continued focus should occur on practical / hands on learning approaches...
- Modifications ... for use in pharmacy technician training programs ...
- ...translate 2 or 3 sections of the e-Resource into French (e.g., documentation, consumer health informatics, privacy/security/confidentiality).



# Association of Faculties of Pharmacy of Canada

## INFORMATICS EDUCATIONAL PROGRAM





# Reports / Publications / Presentations

- 2016 Pharmacy educator peer leader network (PEPLN) internal evaluation report <http://afpc.info/content/pepln-evaluation-report>
- Pharmacy Educator Peer Leader Network (PEPLN): Informatics for Pharmacy Students e-Resource - e-poster presentation  
<https://www.infoway-inforoute.ca/index.php/en/component/edocman/resources/reports/clinical-adoption/3040-pharmacy-educator-peer-leader-network-pepln-informatics-for-pharmacy-students-e-resource?Itemid=101>
- PEPLN newsletters <http://afpc.info/content/pepln-newsletters>
- E-safety through a national program for educating pharmacists-in-training - presentation  
[http://www.coachorg.com/en/newsandevents/resources/esafety\\_summit/presentations/3\\_harold\\_lopatka\\_oct\\_27\\_esafety\\_presentation\\_-\\_afpc\\_lopatka.pdf](http://www.coachorg.com/en/newsandevents/resources/esafety_summit/presentations/3_harold_lopatka_oct_27_esafety_presentation_-_afpc_lopatka.pdf)
- Pharmacy Informatics entry-to-practice competencies for pharmacists  
[http://afpc.info/system/files/public/AFPC%20ICT%20Informatics%20Brochure%20In%20house1\[1\].pdf](http://afpc.info/system/files/public/AFPC%20ICT%20Informatics%20Brochure%20In%20house1[1].pdf)



# Pharmacy Educator Peer Leader Network (PEPLN) Cross-Country Peer Leader Panel



Lisa Bishop, Memorial University

Gilles Leclerc, University of Montreal

Marie Rocchi, University of Toronto

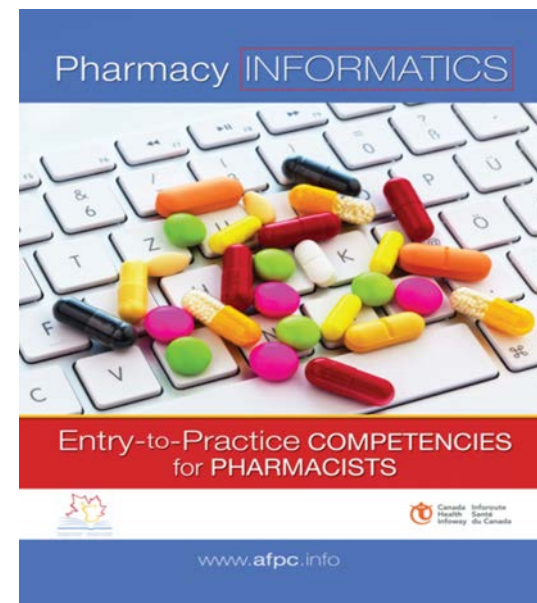
Marion Pearson, University of British Columbia





# Next Steps for the Informatics Project

Lisa Bishop, Memorial University  
CPERC June 2016





# Next Steps

1. Establish Informatics SIG
2. Pharmacy Educator Informatics Network



# Informatics SIG

- Mission
  - focus on, promote, and address key issues related to instruction in health informatics competencies for pharmacy students.
- Goal
  - To serve as a resource for pharmacy faculties and faculty members for facilitating inclusion of health informatics in pharmacy curricula.



# Informatics SIG

- Convened in January 2016
- Chair – Lisa Bishop (Memorial)
- Vice-Chair – Kelly Grindrod (U of Waterloo)
- Membership:
  - Open to AFPC members with interest in pharmacy informatics
  - Others may be invited to join the SIG based on their expertise



# Pharmacy Educator Informatics Network

- Overall Goal
  - Continue to advance the integration of digital and e-health in Canadian pharmacy curricula



Canada Inforoute  
Health Santé  
Infoway du Canada



# Pharmacy Educator Informatics Network

- Objectives
  - Build the capacity and ability of the network to increase digital and e-health integration and related curriculum change.
  - Continuously improve the quality of the e-Resource



# Pharmacy Educator Informatics Network

- Activities
  - Expand the existing pharmacy educator network
  - Create a curriculum map of informatics competencies
  - e-Resource content review/revisions
  - Translate sections of the e-Resource in French



# Project Timeline

August 2016

- Workshop

Aug – Oct 2016

- French Translation
- Recruit Authors/reviewers

Sept 2016 –  
March 2017

- Recruit faculty colleagues
- Content Revision

Jan – March  
2017

- Curriculum Mapping





# Introducing Version 2: Informatics for Pharmacy Students e-Resource



<http://afpc-education.info/moodle/>

Marie Rocchi, University of Toronto



<http://afpc-education.info/moodle/>

→ ↻ afpc-education.info/moodle/ 🔍 ☆

## Informatics for Pharmacy Students


E-RESOURCE

Informatics for Pharmacy Students   Student e-Resources ▾   Faculty e-Resources   You are not logged in. (Login)

Version 2 (2016)  
Version 1 (2014) ▶

# Sponsor & Developer

*Association of Faculties of Pharmacy of Canada*



ASSOCIATION OF FACULTIES OF PHARMACY OF CANADA | ASSOCIATION DES FACULTÉS DE PHARMACIE DU CANADA

ALL STUDENTS

Haven't received your confirmation email? We will automatically confirm your account within 24 hours. Just login later and you will be able to access the e-Resource.

💡 Student e-Resources   🔒 Faculty e-Resources   👤 User Guides



# “Soft Launch” May 2016

- 150 students
  - 124 Waterloo (Year 1)
  - 22 Toronto (Year 3 pre-APPE)
    - 2 Alberta, 1 Montreal (faculty)
- Version 2 focused on:
  - Improved navigation
  - Traditional book format
  - Extensive copy-editing, longer sections abbrev.
  - Some content updates e.g. e-Prescribing 2015



# Thirteen Chapters accessed from a Single Page

Chapter 1: Informatics: Key Concepts ▶

Chapter 2: Digital Patient Records and Systems ▶

Chapter 3: Privacy, Security, and Confidentiality ▶

Chapter 4: Clinical Documentation ▶

Chapter 5: Digital Pharmacy Information Resources ▶

Chapter 6: Evidence Based Medicine and Clinical Guidelines ▶

Chapter 7: Consumer Health Informatics ▶

Chapter 8: e-Health and Telehealth ▶

Chapter 9: e-Prescribing ▶






















Chapter 10: Hospital Pharmacy Informatics: CPOE & Discharge Medications ▶

Chapter 11: Automation in Medication Distribution ▶

Chapter 12: Information Management and Technology ▶



# Icons and Activities

	Section 1: Introduction - Key Points - Learning Objectives	<input checked="" type="checkbox"/>
	Resource: A Guide to Better Physician Documentation	<input type="checkbox"/>
	Section 2: Medical & Health Records	<input checked="" type="checkbox"/>
	Virtual Patient: Mr. Smith's Chart	<input type="checkbox"/>
	Section 3: Legal Considerations	<input checked="" type="checkbox"/>
	Fact Sheet: Clinical Documentation	<input checked="" type="checkbox"/>
	Resource: Pharmacists Medical Malpractice Case Study	<input type="checkbox"/>
	Section 4: Note Writing Fundamentals	<input type="checkbox"/>
	Fraser Health: Health Record Policy	<input checked="" type="checkbox"/>
	Section 5: Formats and Style	<input checked="" type="checkbox"/>
	Poll A: Documentation Format in University Program	<input type="checkbox"/>
	Poll B: Documentation Format in Training Site	<input type="checkbox"/>
	Section 6: Pharmaceutical Care	<input checked="" type="checkbox"/>
	Virtual Patient: Document for Terry	<input type="checkbox"/>
	Section 7: Barriers to Documentation	<input checked="" type="checkbox"/>
	Section 8: Practice Cases	<input checked="" type="checkbox"/>
	Section 9: Conclusion and References	<input checked="" type="checkbox"/>
	Quiz: Clinical Documentation	<input type="checkbox"/>
	Evaluation Survey: Clinical Documentation	<input type="checkbox"/>
	Competency Indicators: Clinical Documentation	<input type="checkbox"/>
	Certificate of Completion: Clinical Documentation	<input checked="" type="checkbox"/>



BACK TO TOP



# Tab Display (Version 1)

[What is Informatics?](#)

[\[Article\] Defining Informatics \(Hersh, 2009\)](#)

[Health Informatics](#)

[Pharmacy Informatics and the Pharmacist's Role](#)

[\[Video\] Medication Use Cycle](#)

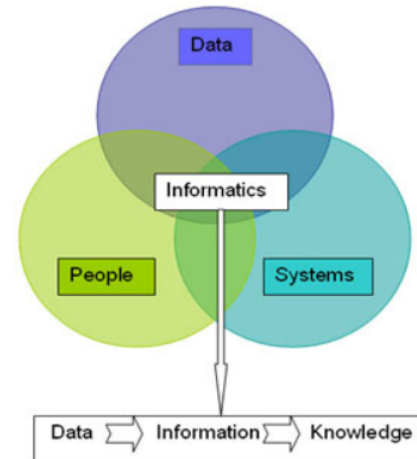
[Medication Management](#)

[\[PDF\] 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.*





# Book Display (Version 2)

[Home](#) [Student e-Resources](#) [Faculty e-Resources](#) You are logged in as Marie Rocchi (Logout)

TABLE OF CONTENTS

1 Types of Breaches

2 Conversational Violations

3 Paper Record Violations

**4 Electronic Record Violations**

5 Portable Records

6 Transmission

7 Disclosure and Storage of Information Outside of Canada

SECTION 6

Types of Breaches and Storage

COURSE MENU

Chapter 1: Informatics: Key Concepts

Section 1: The Field of Informatics

Poll: "What Informatics is Not"

Debrief

New Yorker Article Jan 2014

Activity: Can you get 5 A's?

Section 2: Influences and Examples

Virtual Patient: M.D.'s Records

Section 3: Pharmacy Informatics, Pharmacist's RoL...

Virtual Student: Connected D.W.

Resource: ASHP Statement on the

HOME / MY DOMAINS / STUDENT E-RESOURCES / VERSION 2 / CHAPTER 3: PRIVACY, SECURITY, AND CONFIDENTIALITY / SECTION 6: TYPES OF BREACHES AND STORAGE

Electronic Record Violations

Computerized records and networked systems increase health-care efficiency but are also prone to breaches.

Patient confidentiality violations can occur if:

- network login IDs and passwords are shared
- workstations are left unattended while logged in
- weak, easy to guess passwords are used.

In addition, as with paper records, reading, copying, forwarding, or changing electronic patient records by those not authorized to do so are all patient confidentiality violations.

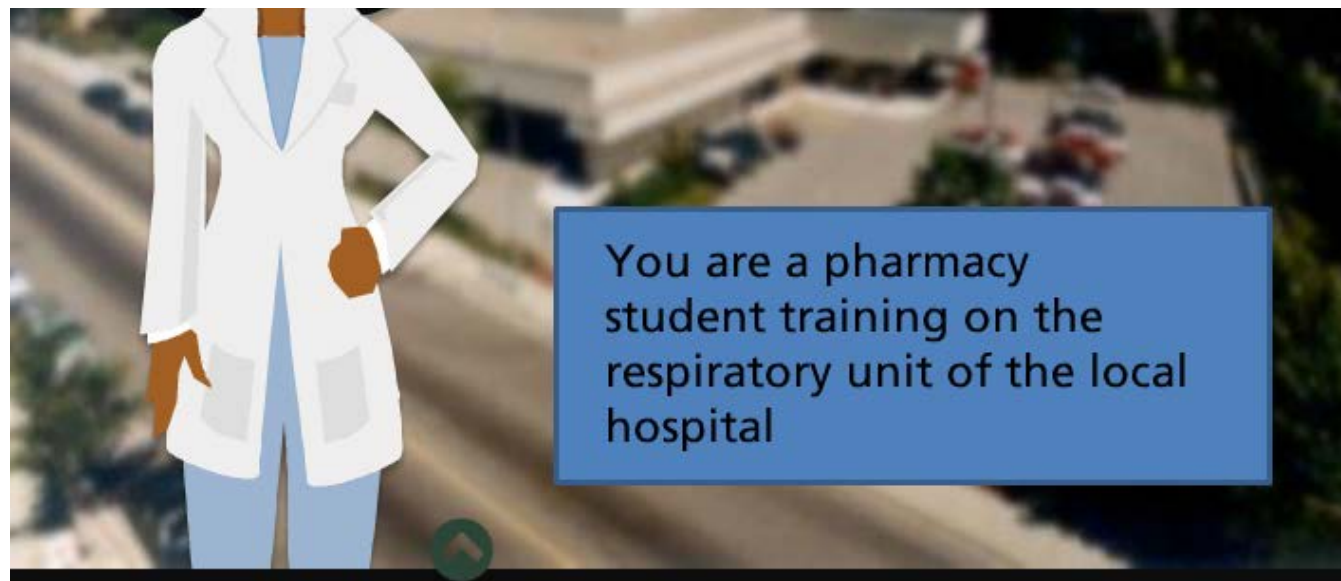
Case Example #1: In Florida, the teenage daughter of a hospital employee used a vacant computer terminal to view the records of patients who had come in for blood tests. As a "joke" she called several patients to tell them they were pregnant or infected with HIV. Source: 1995, American College of Physicians: <http://www.acponline.org/journals/news/nov95/medcuts.htm>

Case Example #2: "The suntan scouting service" involved a worker at an organization that had access to health records, who was also employed at a tanning salon. Officials said the worker would see "interesting clientele" at the salon, and later access Alberta's electronic health system to scout out details for potential dates. Source: April 2007: CTV News [http://www.ctv.ca/servlet/ArticleNews/story/CTVNews/20070417/health\\_privacy\\_070417?s\\_name=&no\\_ads](http://www.ctv.ca/servlet/ArticleNews/story/CTVNews/20070417/health_privacy_070417?s_name=&no_ads)

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Canada

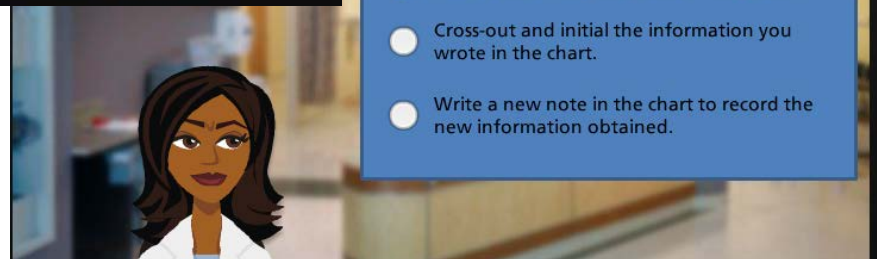


# Virtual Patients (Gen 1)



What action would you take?

- ☐ White-out the note that you wrote yesterday.
- ☐ Do nothing, as the original information was correct.
- ☐ Tear out the note you made in the chart.
- ☐ Cross-out and initial the information you wrote in the chart.
- ☐ Write a new note in the chart to record the new information obtained.








# Virtual Patients (Gen 2)

**Introduction**



**Did you know?** ?

One day in July, a 30 year old female named Natasha, who works in the marketing department of a communications company, has an appointment with you at 12:30, during her lunch break.

"Do you have anything better than Abreva? I don't think it does anything for my cold sores, and my friend told me that she takes a pill for her's. I have a huge business presentation later this week! I've had so much on my plate over the past few days, and I just need to stop this one from breaking out."


< PREV    NEXT >




# (Branched) Decision Making

Below are four modules. Work through them sequentially as you would with a real patient, starting with differential assessment, then minor ailment, management options, and follow up. We have also included some variations on Natasha's case to stimulate discussion in the last module.

Once you are finished all four modules, be sure to click next to proceed to the last part of the case.

 *(Click to read about Minor Ailments Prescribing)*

 *(Click to go back to beginning of VP)*



Differential  
Assessment



Minor  
Ailment



Management  
Options



Follow Up &  
Case Variations

◀ PREV

NEXT ▶



# Quizzes (105 new MCQs)

[Home](#) [Student e-Resources](#) [Faculty e-Resources](#) [Canada Health Infoway](#) [AFPC Website](#) You are logged in as Marie Rocchi (Logout)

### QUIZ NAVIGATION

1 2 3 4 5

Finish attempt ...

Start a new preview

### COURSE MENU

- Dimensions: Legal, Ethical, Regulatory Frameworks
- Privacy, Security, & Confidentiality
- Application of Legal, Ethical and Regulatory Frame...

### Domain 4

### ADMINISTRATION

- Quiz administration
  - Edit settings
  - Group overrides
  - User overrides

HOME / MY DOMAINS / STUDENT RESOURCES / DOMAIN 4 / PRIVACY, SECURITY, & CONFIDENTIALITY / PRIVACY QUIZ / PREVIEW

**Question 1**

Not yet answered

Marked out of 1.00

Flag question

Edit question

1. Which of the following is considered personal information:

Select one:

- ☐ a. Home address
- ☐ b. Home e-mail address
- ☐ c. Lab report
- ☐ d. Photo of person
- ☐ e. All of the above

**Question 2**

Not yet answered

Marked out of 1.00

Flag question

Edit question

2. Which of the following is a privacy breach?

Select one:

- ☐ a. Quietly discussing information about a patient over your mobile phone on public transit
- ☐ b. Looking up the health record of a patient when this is not information required to do your job
- ☐ c. Leaving secured documents containing personal information in a public area
- ☐ d. Sharing user IDs and passwords with a coworker who has forgotten theirs
- ☐ e. All of the above



# Embedded Videos, Readings & URLs

Domain 1 Overview

Topic 1.1 Orientation and Setting Context

Topic 1.2 Pharmacy and Informatics

Topic 1.3 Two Areas: Drug & Patient Information

Topic 1.4 Key Concepts in Informatics

Topic 1.5 eHealth

Topic 1.6: Issues in Healthcare & Pharmacy

Domain 1

ADMINISTRATION

Tab Administration

Edit settings

Locally assigned roles

Permissions

Check permissions

Filters

Logs

Backup

Restore

Domain administration

HOME / MY DOMAINS / STUDENT RESOURCES / DOMAIN 1 / TOPIC 1.1 ORIENTATION AND SETTING CONTEXT / SECTION 3: INFLUENCES SHAPING CHANGE (PART 3)

a. Sharing Health Information has Benefits

**b. PodCasts and YouTube**

c. What about Mobile Devices?

d. Digital Native or Immigrant?

e. What does SM mean to you?

f. Social Media Whiteboard Example

g. The Information Diet

h. Choosing Information for your Consumption

i. Person of the Year

j. You are Invited Again


Dr. James McCormack, at the University of British Columbia's Faculty of Pharmaceutical Sciences was an early adopter of using the Internet to disseminate information (*or more accurately, evidence based healthcare - his area of practice and passion*).

His concise Podcasts are a "go-to" source for many clinicians and are timely, humorous, and accessible. The Therapeutics Education website is a superb example of crisp purpose and self-effacement.

Recently, Viva La Evidence was uploaded to YouTube.

Viva La Evidence

Always an honest word



Now it's how I view the world

0:00 / 4:19

YouTube

The comments below the video are a testament to the broad reach of social media in higher education.



# Polls

## Informatics for Pharmacy Students

E-LEARNING RESOURCE

[Home](#) [Student e-Resources](#) [Faculty e-Resources](#) [Canada Health Infoway](#) [AFPC Website](#) You are logged in as Marie Rocchi (Logout)

### COURSE MENU

- Domain 1 Overview
  - Topic 1.1 Orientation and Setting Context
  - Topic 1.2 Pharmacy and Informatics
  - Topic 1.3 Two Areas: Drug & Patient Information
  - Topic 1.4 Key Concepts in Informatics
  - Topic 1.5 eHealth
  - Topic 1.6: Issues in Healthcare & Pharmacy

[Domain 1](#)

### ADMINISTRATION

- Choice administration
- Feedback

HOME / MY DOMAINS / STUDENT RESOURCES / DOMAIN 1 / TOPIC 1.5 EHEALTH / WHAT DOES TELEHEALTH MEAN TO YOU?

View 0 responses

From the list below, choose the activity that you most closely associate with Telehealth.

- ☐ Home Visits by various care providers
- ☐ Continuing education for healthcare professionals
- ☐ Sending images to remote specialists
- ☐ Remote dispensing kiosks
- ☐ Use of monitoring devices by patients
- ☐ Videoconferencing with patients

[Save my choice](#)



# Access /Use

1. University specific sites deleted to allow **one Universal site**
2. University email address requirement changed to **allow any email address** for enrolment and Open Access
3. **Registration Process** modified to provide categories/demographics
4. Features and Table of Contents Manual to reflect new layout



# Navigation/Layout

1. Domains/Topics converted to **13 Chapters** -accessed from one page
2. Tab format converted to **Book format**
3. Navigation **arrows** provided throughout
4. **Table of Contents** block on left side



# Activities

1. Three new **Virtual Patients (Minor Ailments/Consumer Health)**
2. Quizzes added for all Chapters (105 new MCQs written, added to existing 15 items)
3. OSCAR (EMR) Sandbox decommissioned
4. Certificate settings enabled with consistency in requirements





# Evaluation Results/Themes

## **Positive (“like”)**

- Concise content
- Videos
- Interactive exercises
- Virtual Patients

## **Areas for Improvement**

- Less Reading
- Content beyond current level
- Quiz answers not provided



# Version 3

- Call for Authors/Reviewers
- Emphasis on:
  - Review of existing chapters
  - Development of more interactive exercises e.g. interpreting EHRs
- Potential for new Chapters
  - e Med Rec
  - POCTs
  - Change Management



# Questions?

