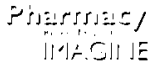




Distance Education for a Doctor of Pharmacy Program A Learning Experience

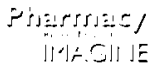
Heather Kertland, PharmD
Leslie Dan Faculty of Pharmacy
St Michael's Hospital



Doctor of Pharmacy Program

Objectives

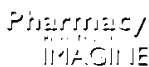
- Review the history of the UofT Doctor of Pharmacy program
- Discuss the process we followed to develop the pilot on-line project
- Highlight the learning that occurred during and after the pilot
- Update on developments since pilot



Doctor of Pharmacy Program

History of the Program

- The Mission of the Doctor of Pharmacy program at the University of Toronto is to provide a specialized learning environment for pharmacists' development of expanded knowledge and skills which enable them to improve patients' health outcomes and contribute to the advancement of the pharmacy profession



Doctor of Pharmacy Program

Mission

- In support of this we are committed to:
 - Teaching knowledge, skills and professional values that are required to practice pharmaceutical care
 - Development disseminating and applying knowledge through innovative teaching and practice
 - Providing an academic environment in which the changing demands of modern health care are met through collaborative partnerships

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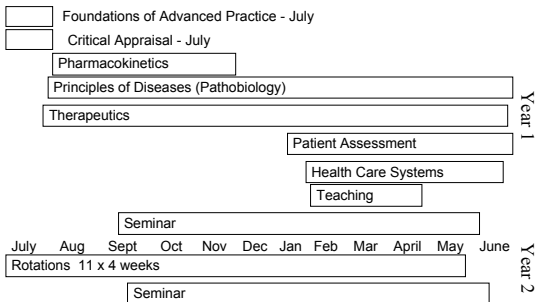
Doctor of Pharmacy Program



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Doctor of Pharmacy Program

1999 - 2002

- perceived market need for Canadian program that delivered flexible format
- Working group formed
 - Phase I
 - Other part-time programs, technology-related pedagogical methods
 - Developed preliminary proposal
 - Phase II
 - Feedback on preliminary proposal from individuals from across Canada
 - Conclusion – not feasible, require alternative format

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2002 - present

- Sept - New director with vision to develop on-line program
- November - decision to pilot on-line session
- Patho/Therapeutics courses were chosen
 - One patient case delivered on-line
- Time identified when students had few assignments (Cardiology - MI)
- Agreement of current students to participate

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Doctor of Pharmacy Program

Pilot

- Objectives
 - Discover the appropriateness of this mode of delivery
 - Document the limitations and benefits of chosen course management system
 - Identify resource issues for future program
 - 2 settings
 - Current students (content, technology etc)
 - Alumni (feasibility etc)

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Doctor of Pharmacy Program

Planning

- Director met with University support personnel to determine resources available for on-line learning at U of T
- Limited resources available
- Estimated cost for developing on-line degree \$70,000 - \$300,000
- University willing to provide free resources for pilot/demonstration project
- Given 2 months to develop pilot

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Doctor of Pharmacy Program

Planning

- Course Management System
 - Blackboard
 - WebCT
 - Web Knowledge Forum
 - Toohy S, Watson E Twelve tips on choosing web teaching software Med Teach 2001;23:552-555
- Resources and Support
 - Wong G, Greenhalgh T, Russell J, Boynton P, Toon P. Putting your course on the web: lessons from a case study and systematic literature review Med Education 2003;37:1020-23

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Doctor of Pharmacy Program

Planning

- WebCT training courses
 - Program coordinator/facilitator - 2 training courses
- Resource Centre for Academic Technology
 - Support staff from RCAT
 - Established 'shell' within WebCT
 - Planning/Uploading
 - Audio recording
 - Trouble shooting

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Course Development

- Principles of Disease
 - Face to Face
 - 3 hour didactic session 1day/week
 - On-line
 - Audio delivery of lecture
 - Power point slides
 - Required recording of voice-over
 - Required preparation of slides/conversion to HTML
 - Students required RealPlayer on computer

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Course Development – Therapeutics

- Face to Face 9 hours over 1 week (Thurs/Tue/Wed)
 - Session 1 (3 hours)
 - Presentation of didactic session of material not covered with discussion period (Acute MI management)
 - Class discussion of case, using therapeutic thought process develop their learning objectives
 - Course facilitators objectives provided after session
 - Session 2 (3 hours)
 - Students presents learning that has occurred and applied to identified problem
 - Session 3 (3 hours)
 - Students develop therapeutic and monitoring plan for patient case, discuss outstanding learning objectives

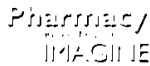
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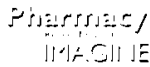
Therapeutics On-line session

- Modified shell of course (welcome message etc)
- PowerPoint slides, written text and required readings were prepared and posted for students review prior to starting case (prepared 1 month prior to pilot)
- Case posted for students review
- On-line chat session for objective setting (recorded)
- Facilitators objectives made available after chat session
- Set guidelines regarding timing of posting response to learning objectives



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- Set topics that followed thought process to initiate threaded discussions within bulletin board
- Reviewed postings within bulletin board and commented when required
- Answered e-mail directed at facilitator
- Developed, posted and evaluated formative quiz
- Sternberg CS Embedding a pedagogical model in the design of an online course Nurse Educator 2002:27170-73.



Doctor of Pharmacy Program

WebCT
Home | View | Designer Options

Current Panel
Visible to Designers

Welcome to your WebCT Pilot Case for PHM 603

Welcome to the WebCT pilot case for Therapeutics. This case is to pilot a method of delivery for an on-line therapeutics course. The topic of this case is ST elevation myocardial infarction.

Course Menu

- Introduction
- Calendar
- Student Homepages
- Communication
- Learning Objectives
- Assignments
- Lectures
- Case
- Learning Objectives

Done

Start | Incomplete - M... | Microsoft Pow... | Document2... | Acrobat Reader | Letter of refer... | Heather's Deu... | Internet | 4:01 PM

Harrisons' Demos Course - WebCT 3.6.3 - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address http://www.courses.worshipers.utoronto.ca/SCPT/featherdeno/course/serve_home

MYINSECT | RESUME COURSE | COURSE MAP | RESOURCES | HELP

Platelet degranulation View Designer Options

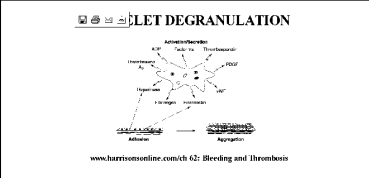
Home - PHM604 Fundamentals of Human Disease

ACTION MENU: Previous Next Contents Retrace Refresh

Control Panel Visible to Designers

Course Menu

Acute Myocardial Infarction Pathophysiology



www.harrisonsonline.com/ch 62: Bleeding and Thrombosis

PHM604 Fundamentals of Human Disease: Page 924

Internet

Harrisons' Demos Course - WebCT 3.6.3 - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address http://www.courses.worshipers.utoronto.ca/SCPT/featherdeno/course/serve_home

MYINSECT | RESUME COURSE | COURSE MAP | RESOURCES | HELP

PCI View Designer Options

Home

ACTION MENU: Previous Next Contents Retrace Refresh

Control Panel Visible to Designers

Course Menu

Primary Percutaneous Coronary Intervention (PCI)

- alternative to thrombolytic therapy if performed in a timely fashion (door to balloon time for 90 minutes) by skilled individuals
- Restores flow in infarct-related artery in 90% of patients
- ADAMI trial found a difference between death/non-fatal MI between primary PTCA (5.1%) vs alteplase (12%) N Engl J Med 1993;328:673-679
- Fewer bleeding complications
- Coronary stents are not used in addition to PTCA
- Clopidogrel required if stent inserted

Lecture: Page 703

Internet

Harrisons' Demos Course - WebCT 3.6.3 - Microsoft Internet Explorer

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Address http://www.courses.worshipers.utoronto.ca/SCPT/featherdeno/course/serve_home

MYINSECT | RESUME COURSE | COURSE MAP | RESOURCES | HELP

Learning Objectives View

Home - Learning Objectives

Advanced Therapeutics PHM603, 2002-2003

Instructor Objectives

Case #: **Cardiology - Week 3 Topic: STEMI**

Control Panel Visible to Designers

Course Menu

Learning Objectives:

1. Compare and contrast the fibrinolytic agents currently available
2. Select and defend your choice for acute therapy for a patient presenting with a myocardial infarction
3. Design a therapeutic regimen to reduce the recurrence and complications of a MI for a given patient
4. Develop a care plan for a patient with an acute myocardial infarction

Content knowledge (this is the information you will need to understand in order to meet the above objectives)

Signs and symptoms of an acute MI
 ECG evidence of an acute MI
 Laboratory evidence of an acute MI
 Pathophysiology of an acute MI
 Classification(s) of a MI
 Complications of a MI (acute and chronic)
 Surrogate endpoints used in fibrinolytic trials
 For the acute management of an MI, the indications/contraindications, efficacy

Internet

Heather's Demo Course - W04C1.3.6.3 - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address http://www.new.courses.utoronto.ca/SCRIPT/heatherdemo/course_home

MYNEXCT | RESUME COURSE | COURSE MAP | RESOURCES | HELP

Calendar View Designer Options

Home

Control Panel Visible to Designers

Previous Month Next Month

Note: All private entries are italicized.

	Sun	Mon	Tue	Wed	Thu	Fri	Sat
Time Week			1	2	3	4	
Time Week	5	6	7	8	9	10	11
Time Week	12	13	14	15	16	17	18
Time Week	19	20	21	22	23	24	25
Time Week	26	27	28	29	30	31	

Course Menu

- Class Available: Acute Management of Myocardial Infarction
- Class Session
- Discussions
- Discussions
- Discussions
- Quiz

Lectures: Page 7/23

Heather's Demo Course - W04C1.3.6.3 - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address http://www.new.courses.utoronto.ca/SCRIPT/heatherdemo/course_home

MYNEXCT | RESUME COURSE | COURSE MAP | RESOURCES | HELP

All View Designer Options

Home - Communication - Discussions

Control Panel Visible to Designers

Select a topic to see its messages

Compose Discussion Message Search

Manage Messages Topic Settings Manage Topics

Topic	Unread	Total	Status
All	0	12	
Mini	0	0	public, unlocked
Notes	0	0	public, unlocked
ACE inhibitors	0	1	public, unlocked
antiarrhythmics	0	0	public, unlocked
beta-blockers	0	1	public, unlocked
Caused by a disease	0	1	public, unlocked
Drug therapy indicated	0	0	public, unlocked
Hypertension	0	1	public, unlocked
Is it caused by a drug	0	2	public, unlocked
Infarct	0	1	public, unlocked
nitroglycerin	0	1	public, unlocked
Objectives	0	4	public, unlocked
other drugs	0	0	public, unlocked
Urgency	0	0	public, unlocked
What is the best drug	0	0	public, unlocked

Lectures: Page 7/23

Heather's Demo Course - W04C1.3.6.3 - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address http://www.new.courses.utoronto.ca/SCRIPT/heatherdemo/course_home

MYNEXCT | RESUME COURSE | COURSE MAP | RESOURCES | HELP

Objectives View Designer Options

Home - Communication - Discussions - All

Discussion Messages: Objectives / Manage Messages

Return to Discussions

Compose Discussion Message

Search Mark All As Read Update Listing

Select topic: Objectives Show all / Show unread Threaded / Unthreaded

Select all Select none Apply to selected message(s) below Compile Go

Subject	Author	Date	Status Attachment
101. erg	Ehame Law (Ehame)	Tue Apr 29, 2003 15:12	
108. Classifications of MIa: Q-waves	Janice Ma (Janice)	Tue May 13, 2003 16:32	

Lectures: Page 7/23

Results

- Students agreed not to meet for therapeutics the week of the pilot
- Students registered by program coordinator
- Students oriented to WebCT by facilitator
- Posting of materials by RCAT, program coordinator and facilitator

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Principles of Disease

- Audio recording could not be made prior to planned week
- 'live' session was recorded for alumni session
- Significant reworking of audio session required
 - 24 slides
 - Audio file requiring real player

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Results - Therapeutics

- Students reviewed didactic material at later time
- 3 chat sessions
 - Initial 90 minute chat session
 - Student initiated own session
 - Wrap-up session at end
- Students followed previous face to face timelines to post information creating busy two final days
- Needed to keep several discussions going concurrently which students found challenging
 - 50+ postings to bulletin board, including summary documents created by students
- All students completed formative assignment

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Results - Alumni

- Alumni did not receive on-site orientation to WebCT, received directions and problem solved on their own
- Unable to coordinate time to complete session as a group over a 2 week period
- Several alumni completed session independently over 2 months
- Provided feedback on process and technology

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Technical

- Hospital firewalls
 - Impact on chat rooms
- Learner's familiarity with software/technical issues
 - Minimal computer standards/internet access for future program
 - Orientation to technology and ongoing tech support for student/faculty
- Challenges of developing/delivering audio on WebCT

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Students

- Students had thought process in place so could easily adopt the use of it
- Students identified differences of face to face learning and on-line learning
- Timetable of activities was different compared to usual routine
- Definite learning curve with technology
- Alumni group – challenges of identifying 2 week block to complete learning as group, technical challenges

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Facilitator

- Planning, planning and advanced planning
- Needed to have understanding of software and resources for tech support
- Timelines quite different face to face course
 - On-line several times a day
- Need to realign skill of assessing student's understanding of information as case proceeded

Fringe Benefits

- SARS
 - Facilitators could not travel to University
 - Students could not enter hospitals
 - Facilitator trained in Blackboard, WebCT, coordinator of Therapeutics Course for on-line ANCP program
 - Learning was transferred from face to face to WebCT
 - Facilitator was able to provide 'tips' learned from other on-line learning, commenting the students had very good discussions

Overall Evaluation

- WebCT can be used as a base for on-line delivery of courses for the Doctor of Pharmacy program
- Student/Staff orientation and support are essential
- Students need committed time for effective collaborative learning
- Current format of advanced therapeutics suits on-line learning

Distance Doctor of Pharmacy Program

- Proposal to Faculty January 2004
- Target: First Class August 2004
 - The current on-campus program's mission statement will provide overall direction of the distance program
 - Distance program will maintain same rigor in teaching and assessment as current on-campus program
 - Distance program will be based on self-directed learning, collaborative learning, problem solving, pharmaceutical care as practice model

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Outline

- Cohort of students
- 2 years of course work, 11 rotations
- 3 residencies (4 – 7 days at U of T)
 - Introduction to; technology, the program, faculty, cohort of students, group learning, delivery of courses
 - Evaluation, seminar, coursework

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Resources

- Technology resources identified
 - Conversion/posting information
 - Development of additional web-based resources not currently available on WebCT
 - Educational Consultant for course development
- On-going education of current faculty
 - Education Specialists – Wayne Sellors OISE
 - WebCT courses
 - Retreat
- Potential to use facilitators from across Canada in Advanced Pharmacotherapy course

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Other areas

- Courses
 - Realignment of Principles of Disease and Therapeutics as one course
- Admissions
 - Realistic workload considerations
 - Ideal distance learner
 - Self-discipline, motivated, independent, able to use technology
- Evaluation
 - Student – working to identify technology to support evaluation
 - Program evaluation program

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Other references

- Hunter TS, Deziel-Evans L, Marsh WA
Assuring Excellence in Distance
Pharmaceutical Education AJPE
2003;67:1-25

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Thanks go to

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Karl Iglar – Principles of Disease Instructor
RCAT support staff
Tom Brown and PharmD Faculty

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