



University Health Network

Toronto General Hospital Toronto Western Hospital Princess Margaret Hospital

Implementing a Learning Management System in a Hospital Setting: A Real World Experience

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Objectives

- Discuss the advantages of a Learning Management System (LMS)
- Describe the process of selecting and implementing a LMS
- Share lessons learned and tips from our experience



The University Health Network (UHN)

- Vital statistics

- 823 Beds
- ~10,000 Employees
- ~2,700 Nurses
- ~6,000 Computers

- 770,297 annual Outpatient visits
- 56,213 annual Inpatient and DSU visits
- 80,000 annual Emergency Visits



The Toronto General Hospital



The Toronto Western Hospital



Princess Margaret Hospital



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Driving Forces for Educational Change

- Educational shift to bedside
- Delivery of repetitive, generic content
- Unable to address individual learning needs
- No standardization of design or delivery
- Limited educator availability and classrooms
- Workload issues staff unable to attend classes
- Ineffective/non-existent reporting



eLearning

‘eLearning is the use of internet technologies to deliver a broad array of solutions that enhance knowledge and performance’

Rosenberg, 2001



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What is a Learning Management System?

A Learning Management System (LMS) is web-based software that launches educational content, manages course registration, tracks course completion status, maintains transcripts and produces reports.



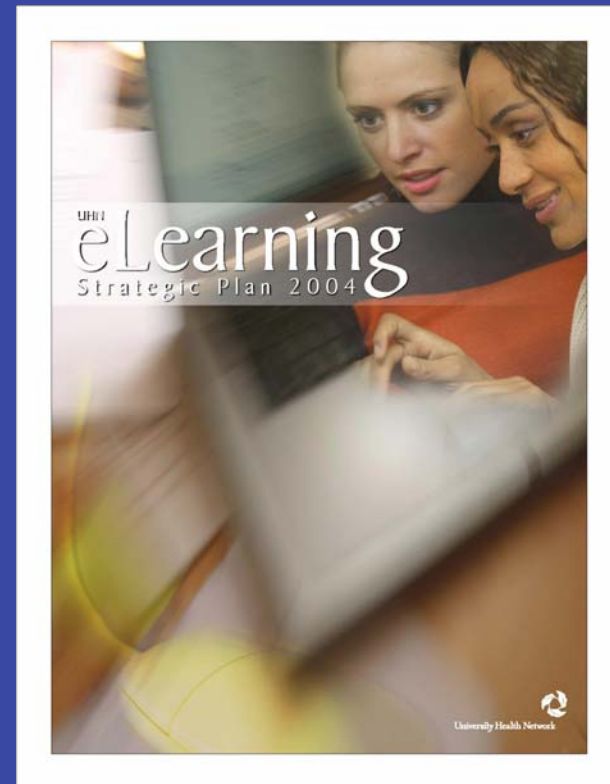
Advantages of a LMS

- Access to learning programs when needed
- 24/7 availability
- Register and track participants
- Reporting tools to enable managers and educators to track staff progress
- Aggregate data for corporate reporting
- Track education costs



Selecting an LMS

- eLearning Committee/Task Force
- Consultants
- RFI Process
- eLearning Strategy
- RFP Process



TAHSN Collaboration



472 Beds

~5,000 Employees

~1,100 Nurses

~1,900 Computers

630,800 annual Outpatient visits

25,974 total admissions

38,282 annual Emergency Visits



591 Acute & 523 Aging/Veteran Beds

~12,000 Employees

~2,700 Nurses

>5,000 Computers

~600,000 annual Outpatient visits

42,000 total admissions

41,121 annual Emergency Visits



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Contract

- Multi-organization agreement
- Main issues
 - Negotiating cost
 - Consensus
- Tip
 - Representative body negotiating on behalf of all organizations



Implementation Process

1. Face-to-face configuration workshops with the vendor
2. Installing the system
3. Testing
4. Sign-off



Issues Encountered During Implementation

1. Implementing the technology
2. Providing access to PCs, email
3. Managing change
4. Supporting the development of courses



Implementing the Technology

Issues

- Ability to configure and install the LMS
- Level of familiarity with the software (in-house expertise)
- Ability to provide ongoing support for the product
- Security: in-house vs hosted
- Cost



Implementing the Technology

cont'd

Solutions

- Host the LMS at vendor's site
- Use vendor consulting services to implement the technology
- Use vendor's Customer Support Services

Administration Center

HOME CLASSES COURSES GROUPS PEOPLE REGISTRATIONS CURRICULUMS

Options

- ▶ New Class
- ▶ New Class From...

Search by:

Name

Find Advanced

Recent Classes

- ▶ [NUUH100 09/05/2005](#)
- ▶ [NRUHCR200 08/29/2005](#)
- ▶ [NUUHNN400 08/29/2005](#)
- ▶ [NRUHCR100 08/29/2005](#)
- ▶ [NUUH1000 08/01/2005](#)
- ▶ [UHNCHES 08/06/2005](#)
- ▶ [NRUHCR100 08/29/2005](#)
- ▶ [NRUHOR100 08/29/2005](#)
- ▶ [UHN100 08/22/2005](#)
- ▶ [NRUHCR200 08/29/2005](#)

New Class

ID Data Roster To-Do Content Info Notes Budget

Course Code: *

Name: *

Start Date: *

End Date:

Start Time:

End Time:

Minimum Capacity:

Maximum Capacity: *

Duration:

Sessions:

Charge Per Seat:

Delivery Method:

Target Audience:

Cancellation Code:

Cancellation Reason:

Competency Type:

Location:

BLEND - Blended Training
CBT - Computer Based Training
ILT - Instructor Led Training
OJT - On the Job Training
OLT - On-Line Training
PREC - Preceptor
SIM - Simulation
SS - Self Study

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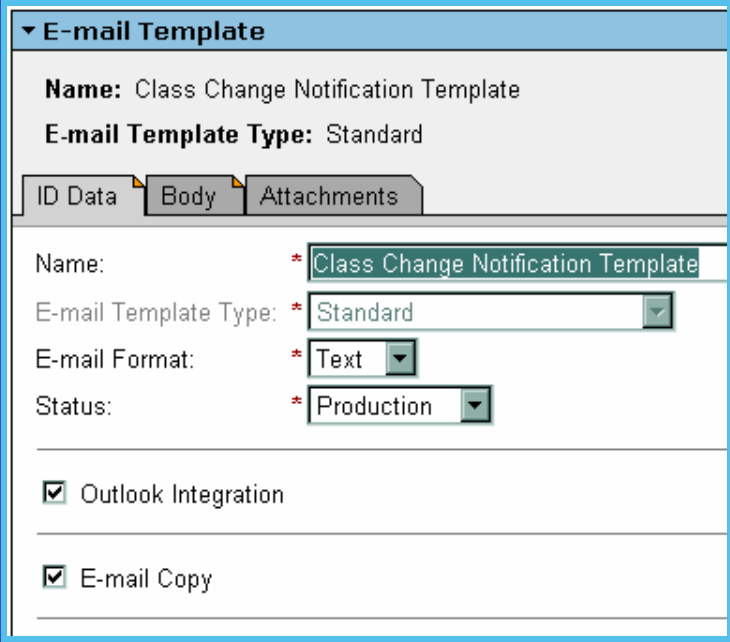
Access to PCs and email

Issues

- Ratios of PCs to Nurses
- Not all Nurses have email accounts

Solutions

- Create an inventory of non-clinical PCs
- Phase in the use of eLearning
- Set up email accounts as we phase in access



The screenshot shows a configuration window for an E-mail Template. The window has a title bar that says "E-mail Template". Below the title bar, there are two lines of text: "Name: Class Change Notification Template" and "E-mail Template Type: Standard". Below this, there are three tabs: "ID Data", "Body", and "Attachments". The "Body" tab is selected. Below the tabs, there are four rows of configuration options, each with a red asterisk on the left and a dropdown menu on the right: "Name: Class Change Notification Template", "E-mail Template Type: Standard", "E-mail Format: Text", and "Status: Production". Below these options, there are two checkboxes: "Outlook Integration" and "E-mail Copy", both of which are checked.



Managing Change

Issue

- Anticipated resistance to doing something new

Solutions

- Set realistic goals and expectations
- Phase in use
 - Clinical educators
 - Record face-to-face classes
 - Register students for classes
 - Activity reports

Registration Activity Report

Nursing Orientation	
Number of Registrants	400
Cancellations	10
% Pass	75
% Fail	25
Pain Management	
Number of Registrants	400
Cancellations	10
% Pass	75
% Fail	25
Patient Centred Care	
Number of Registrants	400
Cancellations	10
% Pass	75
% Fail	25
Inserting Chest Tubes	
Number of Registrants	400
Cancellations	10



Managing Change

cont'd

- Phase in to Nursing staff (by unit)
 - Register for face-to-face classes
 - Confirm they have read a policy
 - Online tests
 - Courses

Online Privacy Policy

By selecting the "I ACCEPT" checkbox you acknowledge that you have read and understand the policy and agree to al of its terms and conditions.

I ACCEPT
 I DO NOT ACCEPT

OK



Course Development

Issues

- Purchase or build
- Development time
- Cost

Solutions

- Purchase already developed courses
- Develop courses in-house
- Collaboratively develop courses



Lessons Learned and Tips

Communication

- Group meetings: Nurse Managers, Educators
- Individual meetings with Clinical Educators
- Nursing week
- Printed Newsletter/Brochures
- Intranet
- Contests
- Posters / General email



Lessons Learned and Tips

Vendor

- Selection process: eliminate vendors who don't meet your core criteria
- Stable company
- Experience in your industry
- References



Lessons Learned and Tips

Implementation

- Consider the value of hosting externally versus hosting on your own servers. Things to watch for in a hosted environment
 - Charge for space
 - Access speed
- Watch out for additional costs/spell out everything in detail
- Consider fixed-fee vs cost estimate





Welcome to the

CHEST TUBES

Course

Overview

Setup

Monitor

Removal

Quiz

Exit





OVERVIEW

In this module, you will learn about:

- the types of chest tubes
- common conditions requiring chest tube insertion
- typical patient case scenarios

Estimated time to complete this module: 10 minutes.

Click **Start** to begin the module or **Return** to return to the home page.

Return Start





CHEST TUBES: OVERVIEW

Pleural and Mediastinal Chest Tubes: A Comparison

Pleural Chest Tubes	Mediastinal Chest Tubes
Placed near apex of lung to remove air or placed laterally to remove blood or pleural fluid from the pleural space.	Placed anterior and posterior to the heart. Used to remove fluid and air from the pericardial space following cardiovascular surgery.
Re-establishes normal intrathoracic pressure after injury, pathology, or surgery.	Prevents accumulation of fluid in the pericardial space; prevents cardiac tamponade.
Usually one tube is inserted.	Often two more more tubes are inserted, Y-connected.
Tube-securing suture as well as purse-string suture will be present.	Tube-securing suture will be present.



TIP

In a cardiovascular surgery patient, pleural chest tube may be tunneled and exit sub-xyphoid. A sub-xyphoid pleural chest tube is removed with and in the same manner as the other mediastinal chest tubes.

When present, the third mediastinal tube is sited in the left pleural space. When present, the fourth mediastinal tube is sited in the right pleural space.

These additional pleural tubes are present when the thoracic arteries are used for cardiac revascularization.



CHEST TUBES:OVERVIEW

Common Conditions

Chest tubes are used to treat a variety of conditions. Four common conditions are listed below.

Pneumothorax

Hemothorax

Pleural Effusion

Cardiac Tamponade

Click each button to find out more.

After reviewing each condition click **Next** to test your understanding of this section.



CHEST TUBES:OVERVIEW

Pneumothorax

Click below on the tabs to learn about each type of pneumothorax.
When you have finished, click the **Return** button to return to the to Common Conditions page.

General Info

Spontaneous

Traumatic

Tension

General Information

A pneumothorax is a condition in which there is air in the pleural space.

Signs and Symptoms of a pneumothorax:

- Chest pain
- Dyspnea
- Decreased breath sounds on affected side
- Lack of movement on affected side

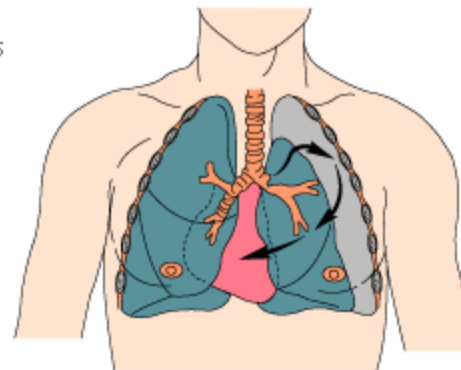


Illustration: Pneumothorax

Return



CHEST TUBES: OVERVIEW

Pneumothorax

Click below on the tabs to learn about each type of pneumothorax.

When you have finished, click the **Return** button to return to the to Common Conditions page.

General Info

Spontaneous

Traumatic

Tension

Spontaneous Pneumothorax

This type of pneumothorax occurs without warning. It is:

- caused by the rupture of a small bleb on the lung surface
- often seen in tall, thin males who smoke
- a complication of lung diseases such as: COPD, Cystic Fibrosis, Necrotizing pneumonia, AIDS

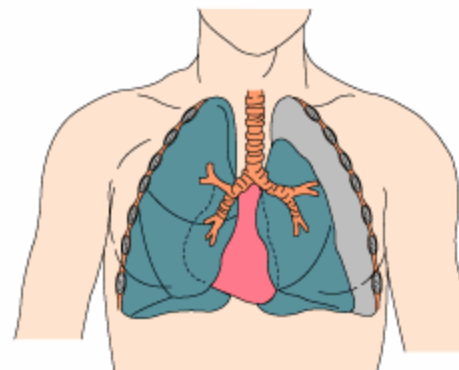


Illustration: Spontaneous Pneumothorax

Return



CHEST TUBES:OVERVIEW

Pneumothorax

Click below on the tabs to learn about each type of pneumothorax.

When you have finished, click the **Return** button to return to the to Common Conditions page.

General Info

Spontaneous

Traumatic

Tension

Traumatic Pneumothorax

Several types of trauma can lead to a pneumothorax:

- Penetrating injury to chest (e.g., bullet wound) causes an open traumatic pneumothorax
- Chest wall trauma with no external opening (e.g., severe rib fracture) causes closed traumatic pneumothorax
- Iatrogenic traumatic pneumothorax occurs as a result of invasive procedures that cause lung puncture such as needle aspiration, central venous line insertion, surgery (lobectomy, lung or heart transplant, coronary artery bypass graft) or prolonged mechanical ventilation

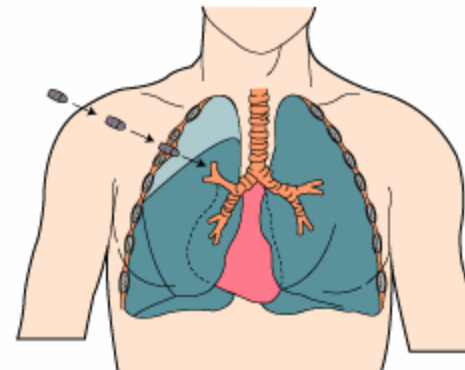


Illustration: Traumatic Pneumothorax

Return



CHEST TUBES: OVERVIEW

Pneumothorax

Click below on the tabs to learn about each type of pneumothorax.

When you have finished, click the **Return** button to return to the to Common Conditions page.

General Info

Spontaneous

Traumatic

Tension

Tension Pneumothorax

This is the most severe form of pneumothorax . It may be life-threatening and requires rapid treatment.

Signs and Symptoms:

- Rapid, laboured respirations
- Tachycardia, cyanosis, hypoxemia
- Sudden chest pain extending to shoulders
- Tracheal deviation to the opposite side

Complications:

- Lung collapse
- Mediastinal shift
- Impeded venous return
- Diminished cardiac output

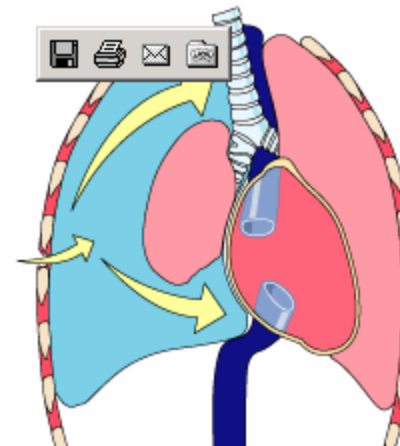


Illustration: Tension Pneumothorax

Return





CHEST TUBES: SETUP

Introduction

Most chest tubes are inserted in the Operating Room. After insertion, your patient will be transferred to your unit with the chest tube already connected to a Pleur-evac chest drainage collection unit. You will simply need to connect the Pleur-evac chest drainage collection unit to wall suction.

The Pleur-evac collection unit will need to be exchanged when:

- the unit is leaking
- the unit is full (2000-2200 ml of drainage collected)
- the unit is knocked over, thereby making it difficult to accurately measure the amount of drainage



CHEST TUBES: SETUP

Connecting Wall Suction to Existing Pleur-evac

Click the **Play** button to start the demo. When you have finished, click the **Return** button to return to the Case Scenario screen.



Connect the short suction tubing of the Pleur-evac to the long suction tubing extending from the wall suction source.

Return





CHEST TUBES

CHEST TUBES: SETUP

Connecting Wall Suction to Existing Pleur-evac

Click the **Play** button to start the demo. When you have finished, click the **Return** button to return to the Case Scenario screen.



Turn the wall suction dial to adjust the amount of suction.



Return





CHEST TUBES
Monitor

MONITOR

In this module, you will learn about:

- the ongoing care and monitoring of the patient with a chest tube
- the ongoing monitoring of the the chest drainage system
- some tips about routine care and troubleshooting.

Estimated time to complete: 10 minutes

Click **Start** to begin the module or **Return** to return to the home page.

Return Start





CHEST TUBES: Care and Monitoring

Assessing the Chest Tube Drainage System

There are two things you should assess when monitoring a patient's chest tube drainage system. Click on the tabs to find out more. When you have finished, click **Next** to continue.

Drainage System

Chest Tube Connection

Drainage

Monitor drainage q4h and prn

- Colour
- Drainage may be serous, sero-sanguinous, or sanguinous
- Volume

If there is a sudden increase in drainage, notify MD or ACNP and check vital signs

To facilitate drainage, you may need to milk the tubing. Click the **Video** button to view milking technique.

Video





CHEST TUBES: Care and Monitoring

Milking Technique

After milking a chest tube, elevate the tubing; let drain by gravity into drainage system; repeat q4 hours and prn to ensure emptying of tubing.

Click the **Play** button to start the video. When you have finished, click the **Return** button to return to the Chest Tube Drainage System screen.



Return



CHEST TUBES: Care and Monitoring

Milking Technique

After milking a chest tube, elevate the tubing; let drain by gravity into drainage system; repeat q4 hours and prn to ensure emptying of tubing.

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CHEST TUBES: Care and Monitoring

Milking Technique

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Click the **Play** button to start the video. When you have finished, click the **Return** button to return to the Chest Tube Drainage System screen.



Return



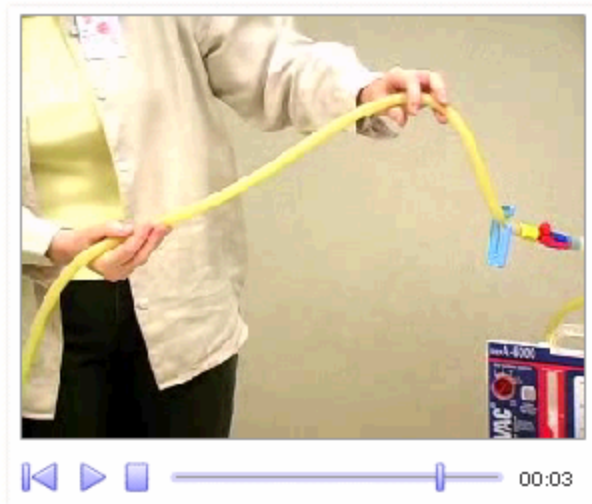


CHEST TUBES: Care and Monitoring

Milking Technique

After milking a chest tube, elevate the tubing; let drain by gravity into drainage system; repeat q4 hours and prn to ensure emptying of tubing.

Click the **Play** button to start the video. When you have finished, click the **Return** button to return to the Chest Tube Drainage System screen.



Return





CHEST TUBES
Quiz

QUIZ

Click **Start** to begin the quiz.

Before you begin you will need to log in. For the purposes of this pilot, please type the word **pilot** in each login box.

Once you select an answer, you will not be able to change your response.

Cancel Start





REMOVAL OF CHEST TUBES

Quiz - Question 1 of 12

Click one button below to select the most correct response.

During the removal procedure, the head of the bed should be:

in high Fowler's position

at a 45 degree angle

in flat position

in Trendelenburg position



Conclusion

- Beneficial to organization to implement the elearning strategy and purchase an LMS
 - Senior management support
- Not a cost but an investment in our future
 - Promote recruitment and retention
 - Improved patient outcomes and satisfaction



Questions?



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