Web Based Resources for Critical Care Education: Results from a Concise Review

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Expanding Use of the Internet
Overview

- Web-based instructional methods are often categorized as e-learning, or the use of internet technologies
- While information on the general use of web based learning is available, limited information exists on resources for critical care education
Objective

- To identify, catalogue, and critically evaluate web based resources for critical care education
- This project was a collaborative effort of the Society of Critical Care Medicine, the World Federation of Critical Care Nursing, utilizing Critical Care Medicine listserves including CCM-L, critical care medicine listserv
Methods

- A multi-level search strategy was utilized.
- Literature searches were conducted (from 1996 to August 31, 2010) using OVID-MEDLINE, PubMed, and Cumulative Index to Nursing and Allied Health Literature (CINAHL).
Methods

- Websites of U.S. and international critical care organizations were reviewed for the availability e-learning resources.

- Listserve postings:
  - Critical Care Medicine Listserve (CCM-L, http://www.ccm-l.org/ > 1300 international members)
  - Advanced Practice Nursing (ANPACC http://health.groups.yahoo.com/group/ANPACC, >1000 international members)
  - World Federation of Critical Care Nurses WFCCN - 39 country members, over 400,000 members

Results

- Over 250 identified resources
- 135 programs specific to critical care
- Variety of e-learning formats:
  - Tutorials
  - Self-directed learning modules
  - Interactive case studies
  - Webcasts
  - Podcasts
  - Video enhanced programs, among others

Web-based resources for critical care education

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(Crit Care Med 2011; 39:541–553)
Types of e-learning available for critical care education

- Interactive case studies
- Self paced tutorials
- Virtual patients
- Podcasts
- Webcasts
- Video enhanced learning modules
- Instructional movies
- Image data banks
- Self assessment quizzes
- Interactive flashcards
- Slide kits

Most Frequent Topical Content Areas of Web-Based Resources for Critical Care Education

The Pulmonary Artery Catheter Education Project (PACEP) was designed to provide a state-of-the-art educational program on how to use the pulmonary artery catheter in the clinical environment and measure learning outcomes for the end-user. Topics are divided into four levels (Levels I - IV) to facilitate participant progression from novice to expert. The overall goal is to provide efficient transformation of useful hemodynamic information to allow the clinician to practice in a safe and competent fashion through web-based technology. A more detailed description on how to use the PACEP educational program can be found by clicking the “Lesson Demonstration” icon. The PACEP educational program is not to be considered a credentialing tool or a means of determining individual competency. There is no registration fee to gain access to the PACEP educational program. To access the first time, click on the “Registration” icon, complete the necessary fields and proceed through the lessons at your leisure. If seeking continuing education credit (CME, CNE, etc.), please click on the box below entitled, “Continuing Medical Education Credit and Other Continuing Education Credit Instructions”, a nominal administrative fee is required.

A collaborative educational effort brought to you and your medical team by the following distinguished organizations:

- American Association of Critical Care Nurses
- American Association of Nurse Anesthetists
- American College of Chest Physicians
- American Society of Anesthesiologists
- American Thoracic Society
- National Heart Lung Blood Institute
- Society of Cardiovascular Anesthesiologists
- Society of Critical Care Medicine

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COURSE OVERVIEW

**LEVEL I**
- Fundamental Hemodynamic Information
  (Part I: Entry level information on hemodynamic monitoring)

Lesson A: Physiologic Concepts of Hemodynamic Monitoring
Lesson B: Interpretation of Hemodynamic Information
Lesson C: Therapeutic Interventions
Lesson D: Hemodynamic Waveform Analysis and Interpretation
Lesson E: Technical Aspects of Hemodynamic Monitoring
Lesson F: Video: Assembly of Pressure Monitoring System

**LEVEL II**
- Fundamental Hemodynamic Information
  (Part II: Fundamental hemodynamic concepts are reinforced from Part I and expanded upon)

Lesson A: Physiologic Concepts of Hemodynamic Monitoring (Part II)
Lesson B: Interpretation of Hemodynamic Information (Part II)
Lesson C: Therapeutic Interventions (Part II)
Lesson D: Hemodynamic Waveforms: Abnormal Waveform Values and Patterns (Part II)
Lesson E: Technical Aspects of Hemodynamic Monitoring (Part II)
Mean RA ≈ RVedp

For this reason, the mean RA pressure serves as an indirect measurement of the RV end-diastolic filling pressure.
**NEW UPDATE**

Steroid Treatment for ARDS

Read statement below from G. Umberto Meduri, MD, who is investigating the effects of steroid treatment in ARDS

This is a brief update on the global impact achieved by research steroids in ARDS (most sepsis-induced). The randomized trial investigating prolonged low-dose glucocorticoid treatment in ARDS that we published two years ago in Chest (1) has had an impact in medical practice. This trial won a national research award and was one of the most read articles by Pulmonologists in 2007. The 2008 edition of the Washington Manual of Critical Care states that "with the exception of glucocorticoids, no pharmacological therapy has yet been shown to decrease the mortality of ARDS independent of treating the underlying cause". Both the Washington Manual and the 2008 International Task Force by the American College of Critical Care Medicine recommended our protocol for the treatment of ARDS.(2)

Most importantly a new comprehensive review of the literature and meta-analysis, published in the current issue of Critical Care Medicine (enclosed), concluded that prolonged low-dose glucocorticoid treatment in ARDS is safe and effective. 

Sample Tour of an ICU Room

For information about a specific item in the ICU Room Tour, click on that item in the photo below. For a more detailed view of the area containing the patient's face, click on that portion of the photo.
Welcome to Our Intensive Care Units

We know how difficult it can be when you have a loved one in an intensive care unit (or ICU). We want to do everything we can to make your stay as pleasant and satisfying as possible. Our ICU's are some of the best in the world, with award winning physicians, nurses and other health care professionals caring for your loved one.

This computer was designed to help the doctors and nurses communicate with you to help you get your questions answered. The computer does not take the place of talking with your doctors and nurses. However, the computer can help you learn the answers to many questions.
Visitor Information

Please click on any of the links below for more information

- Critical Care Information
- Medical Information
- Tour an ICU Room
- Questions You Should Always Ask
Sample Tour of an ICU Room

For information about a specific item, click on that portion of the photo.
Breathing Machine Tubing

What is breathing machine tubing?
Breathing machine tubing is the tubing that connects the breathing machine to the patient's endotracheal or tracheostomy tube. Each breath that the patient takes is passed through this tubing. The breathing machine tubing may have several extra pieces connected to it. For instance, a tube for measuring the pressure in the breathing system may be seen attached to the breathing machine tubing. A humidifier and air warmer may also be seen attached to this tubing.

Are there any potential complications of using breathing machine tubing?
The breathing machine tubing is very reliable. Occasionally the tubing may become disconnected from the breathing machine or the patient. If this happens, the breathing machine will usually alert the attendant.
Delirium Overview and How to Diagnose

Delirium is confusion that comes on very fast, sometimes in just a few hours. When someone becomes delirious, it means that they can not think clearly, have trouble paying attention and are not aware of what is going on around them. Sometimes they may even see or hear things that are not really there but seem very real to them.

Sedation

Increased scrutiny has recently been placed on appropriate titration of sedative and analgesic medications in critically ill patients. This site provides an overview of sedation in the ICU.
Conclusions

- A significant number of web based education resources exist for critical care education in a variety of e-learning formats.
- As identified by critical care educators and practitioners, e-learning is actively being integrated into critical care medicine and nursing training programs, for continuing medical education, and competency training purposes.
Welcome to the World Federation of Critical Care Nurses

The World Federation of Critical Care Nurses exists to provide a global forum and network to link the critical care nurses of the world as individual practitioners, and through their local and national professional associations. Over 30 critical care nursing associations now belong to WFCCN.

This website aims to provide a description of the organisation and its activities. It will also maintain links to sites of interest to nurses and other members of the healthcare industry responsible for the care of the critically ill.

Professor Wouter de Graff  
President, World Federation of Critical Care Nurses

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