Designing and Implementing a Web-Based Curriculum for the Medical Student Clerkship in a Busy Surgical ICU - Our Three-Year Experience

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Learner Audience: We seek to discuss our successful curriculum design and implementation for an elective medical student intensive care unit (ICU) clerkship at the University of Iowa.

Background: Introduction: In the face of an expanding clinical load, time and logistical constraints in a busy 38 bed surgical ICU, we implemented an online curriculum for the senior medical student clerkship to supplement bedside clinical learning in the fall of 2006.

Needs Assessment: The ICU clerkship, prior to 2006 was rate below the 50th percentile for all clinical rotations by students of the Carver College of Medicine. The number of medical students rotating through the ICU had dropped significantly from 2002 to 2006. There was a clear need to reconfigure and redesign the curriculum to improve the learning experience in ICU.

Hypothesis: Implementing a structured online learning curriculum improves learner experience, compliance with a study program and improves enrollment in an elective medical student clerkship.

Methods: We implemented the curriculum using the password protected, online learning portal called ICON (powered by Desire2Learn Incâ€¨ Ontario, Canada) in fall 2006.(1) A series of new lectures were developed incorporating audio, video and text using the program Camtasia Studio® (TechSmith Corporation, â€¨MI USA) that allows screen capture with high fidelity.

The screen capture lectures covered the basic elements of ICU care like hemodynamic monitors, mechanical ventilation etc. We added links to podcasts that are produced by the SCCM (Society for Critical Care Medicine) and provided PDF documents of the most important scientific publications that have changed ICU practice in the past ten years. In collaboration with the Hardin Health sciences library, we developed a web page with electronic resources for the SICU rotation. These included direct links to scientific journals, personal digital assistant resources, evidence based medicine resources and electronic textbooks. (2)

Testing and Evaluations: A pretest is administered on ICON on day 1 of the rotation. A post test is always administered on the second to last day of the rotation is also composed of 20 questions that are randomly derived from a pool of 100 questions including topics covered in ACLS and Fundamentals of Critical Care support (FCCS) courses. The tests are managed (administering, grading and reporting) exclusively on ICON.

Results: 109 students have successfully completed the clerkship since the implementation of the new online curriculum. Each group of students showed an improvement in the mean posttest score by at least 17%+-10. The overall rating of the clerkship also improved steadily from 2006 and was rated at 4.14-+0.85 (on a 5 points scale) and was amongst the top 25th percentile of clinical clerkships offered at the university of Iowa.
Discussion: The online curriculum management tools available today allow for managing clerkship lectures and routine ACGME documentation with a high degree of fidelity.(3)

References:
1. ICON course management for University of Iowa. https://icon.uiowa.edu/
2. SICU resource guide. SICU resource guide
3. Wheeler DW, Whittlestone KD, Smith HL et al. A web based system for teaching, assessment, and examination of undergraduate perioperative medicine curriculum. Anaesthesia 2003,58; 1079-1086.

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Graph 1: Comparison of the Pre and Post Test scores for the ICU rotation.