Centre for Health Education Scholarship (CHES) Research Rounds

Mark Your Calendars! The Centre for Health Education Scholarship (CHES) is inviting you to Research Rounds with

Dr. Martin Pusic

Date: Wednesday, March 17th, 2010
Time: 12:00pm to 1:30pm (Lunch will be served)
Venue: Diamond Health Care Centre, room 2267
*With Videoconference to **IRC 305, MSB 107, NHSC 9-374***

Topic:
Improving the Slope of the Learning Curve: The Nature of Deliberate Practice in Medical Diagnosis

Abstract:

Background: Certain visual classification tasks, such as radiograph interpretation, lend themselves to repetitive deliberate practice. However, practice of these sorts of skills is generally random and inefficiently organized. We systematically built a learning repository of image cases that mirror the spectrum seen in actual practice. Using this image bank, we have set out to explore the nature of learning, through deliberate practice, of a basic diagnostic task.

Objective: To show that the proficiency improvements associated with deliberate practice of a visual skill such as radiograph interpretation can be well described using an individual's learning curve; to investigate the nature of learning during deliberate practice.

Framework: Based on ankle x-rays collected consecutively from a pediatric emergency dept., we developed a 234-item digital case bank. Subjects were given a brief clinical summary and then considered three views of the ankle. They classified each case as either normal or abnormal. For abnormals, they were further asked to specify the location of the abnormality. They were given immediate feedback consisting of highlighting on the images and the original radiologists' dictated report. All answers from the subjects were logged in an online mySQL database. Outcomes are expressed as longitudinal learning curves based on calculated test characteristics such as cumulative sensitivity as well as signal detection parameters.

Research: We will report the results of three different studies that use this framework to draw conclusions as to the quality of each individual case and the nature and quality of the learning by individuals at varying levels of expertise. We will specifically discuss the following questions: how do we know what is a good learning case? how do we assemble the cases into a holistic experience? how do we describe the learning that is happening? and how do we know when a learner has achieved competence?

Significance: Learning curves describing deliberate practice allow us to define how much practice is most efficient and how much is required of a particular individual to achieve a defined level of mastery. Far more practice may be required than is currently done.

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Dr. Pusic obtained his MD at the University of B.C., PEM Fellowship at McGill and Masters Degree in Medical Informatics from Columbia University. He has maintained an unwavering interest in the use of educational technology in clinical settings with particular interest in the interface between education and clinical decision support. He has developed focused computer tutorials that can be delivered immediately after a trainee's interaction with a patient in an Emergency Department. Current research

projects include: 1) investigation of the use of item banks for clinical skills learning; 2) evaluating different instructional strategies for teaching visual interpretation 3) expansion of the series of computer tutorials designed for the emergency department. Dr. Pusic has also been the site coordinator for the Pediatric Emergency Research Canada network for the PECARN research network. Dr. Pusic recently was selected for the Glenda Garvey Teaching Academy which recognizes excellence in health education. He is a PhD candidate at Teachers College of Columbia University.

Please join us.

Dr. Joanna Bates
Director, Centre for Health Education Scholarship

*The Centre for Health Education Scholarship (CHES) is committed to **enhancing health education scholarship** by building capacity for educational scholarship across the Faculty of Medicine through collaboration, team-building, mentorship of new faculty, successful funding applications, and other activities.*