

**Title:** Evaluating student clinical reasoning skills using a computer-based case simulation

**Author:** Yucel Gursel, MD, Berna Musal, & John (Jack) Boulet

**The context and setting:** Dokuz Eylul University School of Medicine (DEUSM) in Izmir, Turkey, implements problem-based learning in preclinical years and task-based learning in clinical clerkships.

Examinations consisting of MCQs, OSCEs and task-end discussions are presently used for summative evaluation of student performance at the end of each clinical task.

**Why the idea or change was necessary:** Based on clinical teachers' experience and student feedback the development of a new and more stimulating interactive learning tool to improve students' clinical reasoning and decision making skills during the clinical tasks was felt necessary.

**What was done?** A computer-based case simulation development project was prepared. The relevant literature and existing case simulation examples were reviewed. A multidisciplinary team of medical educators, pulmonary medicine specialists and a computer expert was formed. The case simulation storyboard was written. The informed consent of a patient with a diagnosis of COPD was obtained to model for case and necessary photographs were taken. Using only locally available resources, the visual and auditory diagnostic aids were determined and converted into appropriate electronic formats. The case structure consisting of interlinked history taking, physical examination, laboratory investigation, and diagnosis and patient management interfaces was created. A pilot implementation with a small group of year six students was carried out and student feedback was obtained.

**Evaluation of the results or impact:** The case development process contributed to the improvement of interdisciplinary cooperation among the project team. Relying entirely on local resources, the computer-based case simulation set an example for the feasibility of a locally developed case simulation project. The project was presented at the National Medical Education Conference in May 2008. The pilot implementation scheduled for September 2008 is estimated to provide preliminary data on its usefulness.

*Correspondence:* Assistant Professor Yucel Gursel, Department of Medical Education, School of Medicine, Dokuz Eylul University, 35340 Izmir, Turkey. Tel: 00 90 232 412 4682. Fax: 00 90 232 259 0541, E-mail: [yucel.gursel@deu.edu.tr](mailto:yucel.gursel@deu.edu.tr)