

Title: Sustaining use of computer-based case simulations in China Medical University

Author: Tianming Zuo, MD, PhD

Context and setting: The Computer-based Case Simulations (CCS) model presents potential doctors with authentic problems where they have to manage the patient in a realistic way. Three decades of research effort eventually culminated in the inclusion of uncued, interactive CCS on USMLE Step 3 in 1999. In 2001, sponsored by the National Medical Examination Center (NMEC) of China, the researchers from China Medical University (CMU) began to develop a CCS examination system, and since the establishment of this system in 2002, it has been used in the OSCE as a part of the final comprehensive examinations of CMU to test the clinical skills of undergraduate students of clinical medicine. The final comprehensive examinations which composed of OSCE and MCQs are regularly held every year in May and September for the 5-year-track and 7-year-track medical students respectively. There are 2 CCS stations in the OSCE. One of the stations uses the same anchor case for test equating, and the other uses the case randomly selected from the rest cases in the CCS database.

Why the idea was necessary: Composing the CCS cases is a very costly and time-consuming process. At CMU, after the cases have been written by the faculty in the CCS Microsoft Word template files, transferring them into the CCS database is a task needing persons with a particular specialized skill set. Currently, the cases can only be transferred into the software program by a few individuals due to the lack of expertise in this area. Also, at present we don't have the authoring tool (software program) for the faculty composing CCS case content to enter them directly into the database. As a result, although 80 cases have been developed since 2004, only 40 cases have been transferred into the CCS database for use in the exams. We still have an additional 40 cases written which need to be transferred into the CCS database. Furthermore, there was an update of database structure and software of CCS in 2007 & 2008 and only 14 cases were transferred because of the difficulty of transferring the old cases into the new database. Obviously, these 14 cases that are used currently will run out in a few years. It is imperative to have more active CCS cases for the final comprehensive exam in CMU for sustaining the use of CCS as an assessment tool.

What was done: The process of transferring CCS cases into the database was analyzed, and a new preliminary authoring tool for CCS has been constructed in 2012 using Microsoft Visual Basic 6.0. The new tool has been used to transfer an additional 5 cases from the old database into the new database. In addition, the new tool will greatly enhance the ability to transfer all the remaining cases to the new database. From the analysis of the currently used 14 cases, 10 with the highest quality are remained to be used together with the added 5 cases in this year's final comprehensive exam for the 7-year-track medical students enrolled in 2007.

Evaluation of results and impact: The result of the testing would be obtained in September this year.