**INTRODUCTION**

Welcome to the ER Psych module.

This program contains a video and interactive case presentation designed to teach physicians and other health care workers evaluation, diagnosis, and treatment of specific psychiatric disorders. Viewing of the video is required to complete the ethics portion of the CME. Please watch the video in its entirety before continuing with the rest of the case presentation.

The video segment shows a psych patient being evaluated by the Psychiatric Emergency Service. During certain segments of the video, relevant ethical points, including those related to the patient’s medical condition, will be identified and discussed. Participants will then complete the ethics portion of a case simulation on the web.

Throughout this case, there is the opportunity to access a web-based Psychiatry Emergency Guide provided by The University of Texas Southwestern Medical Center at Dallas via the “Resource Page” link at the bottom of the screen. The case concludes with a self-testing quiz, and the CME version of the module also contains an evaluation portion.

**Challenge**

In hospital emergency rooms, complex decision-making is a warp-speed process. Juggling diagnostic, ethical, legal and public-safety concerns is a daunting task—particularly when a patient exhibits psychotic behavior. There is a worldwide need for online, scaleable training for healthcare workers that is time and cost efficient.

**Solutions**

Flash MX 2004
Flash Remoting
ColdFusion® MX
Dreamweaver® MX 2004

**Benefit**

- Provides CME material in emergency psychiatry—a neglected content area.
- Flash object-oriented environment decreases need for server-side programming and project personnel.
- Flash programming saved between one-third to one-half of project development time.
- Web-based CME provides location-independent alternative for professional development.

**Project Details**

UTTC is the central support system for online education initiatives among the fifteen universities and research facilities of the UT System. UT Southwestern Medical Center, which trains more than 3500 students, residents and postdoctoral fellows each year, consists of Southwestern Medical School, the Southwestern Graduate School of Biomedical Sciences and the Southwestern Allied Health Sciences School.

UTTC provided funding for the emergency room (ER) Psych module. “Emergency psychiatry is a neglected content area when it comes to online learning,” says Dr. Debbie Miller, Associate Professor of Psychiatry at UT Southwestern Medical Center at Dallas. “There is very little material available out there.”

To facilitate future course building and editing at Southwestern, UTTC created a generic presentation shell based on XML document structure. “You can drop in a new case study very easily or modify existing information,” explains Course Developer, Ross Henderson. “The simulation engine and programming logic remains the same.” Converting a full-blown interactive psychiatric case study from Microsoft Word to XML takes approximately two hours.

The ER Psych module consists of a 20-minute video and an interactive case presentation. The patient is suffering from bipolar disorder—a condition that is often difficult to diagnose. The video includes a discussion of ethical issues associated with the case. The accompanying case presentation, created with Macromedia Flash MX 2004, is a self-paced learning tool with an anticipated completion time of one hour. If a user pauses in the middle of the presentation, it is possible to resume work at the same workstation without repeating the case presentation or losing any completed work.

The student logs on, views a patient scenario, reads the case history online, arrives at a diagnosis and considers treatment modalities. At any point, the user can access a web-based Psychiatry Emergency Guide provided by Southwestern Medical Center Library via the “Resource Page” link at the bottom of the screen. The case concludes with a self-testing quiz, and the CME version of the module also contains an evaluation portion.

“As we expand our modules and add additional programs, online posting will become economically justifiable,” Miller predicts.
Traditionally, medical workers learn about diagnosis and treatment of psychiatric disorders by reading textbooks, listening to class lectures, and accompanying expert physicians on hospital rounds. "One-on-one or small-group sessions with an experienced clinician is still the most valuable, hands-on way to train a student, but it takes a huge amount of time and money," says Michael Anderson, Manager of Course Development and Technology for UTTC.

The video highlights ethics issues, including those related to the federally mandated Health Insurance Portability and Accountability Act (HIPAA) for protecting the security and privacy of patient health information. Several states require health professionals to stay up to date on ethics trends and federal and state regulations. Online CME minimizes the need to travel to physical locations where courses are being offered, and instead provides practitioners with a location-independent alternative for professional development.

"Most Web-based CME is offered by commercial providers. There isn’t a lot of online content available yet from university medical centers," says Miller. She anticipates that situation is about to change. "For practicing physicians, Web-based CME delivered by an academic institution could be very welcome," she says.

Collaborative Effort

In developing the module, Miller was project coordinator on the Southwestern Medical Center or client side. An ethicist, the director of the psychiatric emergency room, and a couple of medical residents assisted her in developing educational content. This included writing the case study and video script.

For the interactive case study presentation, Flash’s object-oriented environment enabled the development team to build the module as a series of inter-connected objects. This makes the module flexible enough to be easily reused for other case studies. With virtually all of the application logic in the module, the need for server-side programming was decreased. This cut down on the number of team members needed for the project, which in turn reduced the amount of time spent in meetings and in project management tasks.

Flash programming saved between one-third to one-half of project development time. Still, the learning curve was considerable for the module, which was unlike previous UTTC projects. The initial case study took 240 hours to complete—including instructional course design, collaborative discussions, programming and final tweaking of the module. Estimated completion time for similar projects is between 120 and 150 hours.

Henderson used Dreamweaver to write the ActionScript classes that power the module. The TeleCampus created a ColdFusion component to receive user information at the completion of the module, via a Flash Remoting connection. "By using Flash Remoting, I could set up a connection between my module and server," Henderson explains. If the connection broke, he received an error message that he could pass on to the user.

Henderson uses JavaScript to gather verifiable user information from Blackboard and push that information into the Flash module. When the user completes the module and the Remoting connection is made with the ColdFusion application, information such as quiz score and time spent in the module is reliably associated with user ID information.

Return on Investment for UTTC

- Generic presentation shell based on XML document structure is flexible and reusable for adding new case studies and modifying old ones.
- Blackboard platform provides password and login protection.
- Delivering content to CME learners helps defray start-up technology costs.
- Provides CME material in emergency psychiatry—a neglected content area.
- Flash object-oriented environment decreases need for server-side programming and project personnel.
- Flash programming saved between one-third to one-half of project development time.

Benefits for Healthcare Workers

- Web-based CME provides location-independent alternative for professional development.
- Worldwide access to CME from prestigious academic provider.
- No special equipment or high-speed Web connection is needed to interact with Flash-based files, which are small, fast and can be seen with most Web browsers.
- Self-paced learning for broad range of skill sets and healthcare positions.

Benefits for Southwestern Medical Students

- Web-based tutorial systematically prepares students for 6-week rotation in psychiatric wards.
- Students work at their own pace in their own time.
- One-on-one, interactive presentation engages the student.
- Concluding self-test tells students whether they have grasped the essentials.

Site Summary

Organization’s Industry: Higher Education
Macromedia products: Dreamweaver MX 2004, Flash MX 2004
Operating System: Windows® 2000, Windows XP
Hardware: Sun® 880