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Design of a Longitudinal, Focused Tutorial System (LOFTS)

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sponds to their needs and interests. The project offers quick and easy access to articles that residents have found useful and has been popular with residents.

DESIGN OF A LONGITUDINAL, FOCUSED TUTORIAL SYSTEM (LOFTS). D.S. Bell[1]; C.E. Harless[1]; J. Higa[1]; C.M. Mangione[1]. [1]University of California, Los Angeles, Los Angeles, CA. *(Tracking ID #136239)*

WEBSITE URL: http://online.cme.ucla.edu/lofts_demo/

BACKGROUND: Physicians often have difficulty keeping up with guidelines. However, the methods they traditionally use produce poor long-term retention of learning and little transfer of learning into practice. We sought to develop an online tutorial system that can efficiently focus physicians on principles that they need to learn, display authoritative content to improve their understanding of these principles, and reinforce newly-learned principles after an appropriate time delay.

CONTENT: We authored 20 learning objectives covering principles embodied in the American Diabetes Association (ADA) guidelines on blood pressure and lipid management. For each learning objective, we identified one or more specific passages in the guidelines that provided authoritative or evidence-based support for the principle. We wrote 2 multiple-choice quiz items for each learning objective, with some based on patient cases and others being more factual.

DESIGN: We constructed a web software system, the Longitudinal Focused Tutorial System (LoFTS), to deliver quiz-based tutorials linked to authoritative passages. Learners are invited to specific modules with an email message containing an identifying link. Tutorials begin with an overview of the learning objectives and source document(s). They then proceed through a randomly-selected quiz question for each learning objective. When the user selects an answer, the linked passage is immediately displayed. If correct, the user can move to the next question. Otherwise, the user is advised to read the document passage and then choose a different answer. Users must actively choose the correct answer before moving on. After completing a module, learners can be automatically emailed an invitation to a reinforcement exercise, which covers the same learning objectives using quiz questions that the user hasn't already answered. LoFTS content modules are authored in the eXtensible Markup Language (XML). The system software is written in Java and uses MySQL to store usage data.

EVALUATION: We evaluated preliminary versions of LoFTS in cognitive interviews with 12 general internists and family physicians sampled from the AMA Masterfile. Subjects were audiotaped as they completed tutorials while "thinking aloud." Tapes were transcribed and coded in Atlas.ti following a grounded theory approach. Themes were extracted independently by two investigators. We found that the quiz questions were motivating and the ADA guideline passages were seen as authoritative. The system was valued for its efficiency, but pop-up windows were disorienting for some. Though all had Internet access in their offices, many had small monitors, making screen "real estate" scarce. Design changes were made to address these issues. We are now evaluating the LoFTS diabetes content with medicine and family practice residents. Among 31 residents who have participated to date, 19 have completed a follow-up exercise after an average of 4.9 days. On average, 51% of questions were answered correctly on the initial quiz and 63% were answered correctly on delayed follow-up.

SUMMARY: An online tutorial with challenging quiz questions and authoritative content passages held appeal for efficient provider education. It was helpful to keep all content within the same window and to remove decorative elements that took up screen space. Residents' knowledge scores increased after the LoFTS tutorial; assessment of their long-term retention is pending.

ELECTRONIC PORTFOLIOS: PROMOTING TIMELY FEEDBACK ON A MEDICINE CLERKSHIP. H.E. Harrell[1]; R.J. Rathe[1]; S. Grek[1]. [1]University of Florida, Gainesville, FL. *(Tracking ID #136063)*

WEBSITE URL: https://medinfo.ufl.edu/cgi-bin/eval.cgi?demo_portfolio

BACKGROUND: Previously we demonstrated that the introduction of educational portfolios into a medicine clerkship significantly improved students' perceptions of feedback by faculty. However, some students criticized the time commitment and logistics of this paper-based portfolio. Also when students rotated at distant clerkship sites, this format did not allow effective communication with the faculty advisor. To address these concerns, we designed an electronic version of the portfolio to streamline the portfolio process, to allow long-distance feedback and advising, and to add features to potentially further enhance feedback and promote reflective learning.

CONTENT: The portfolio is organized according to the six ACGME competencies and contains descriptions of the required content as well as suggestions for other educational activities that could be included in this student-generated portfolio. Evaluation criteria are linked to each submission type. Prompts are being introduced to many of the submissions to promote student reflection.

DESIGN: Our Web-based electronic portfolio can currently accommodate submissions as text, powerpoint, jpeg, pdf, or mpg video. Each student submission generates an automatic e-mail notification to their advisor with a direct link to the portfolio evaluation tool. Likewise, as soon as the faculty has evaluated the submission, the student receives an e-mail summary with a link back to their portfolio. Students have the option to archive any work that they do not want included in the final portfolio. They may also append text to earlier submissions to provide reflection or journal-style entries. The system continuously updates an assessment summary to provide overall "how am I doing" feedback for students and their advisors.

EVALUATION: Beginning in July 2004 we randomized students to electronic vs. paper portfolio and anonymously surveyed them about their satisfaction, feedback perceptions, and perceptions of time usage and efficiency. We also tracked the overall clerkship evaluations to assess for global changes in satisfaction and comments specific to the portfolio. Initially the electronic portfolio was rated significantly lower than paper (p<.05) and there was a trend toward lower feed-

back perceptions in the electronic group. Once the automatic e-mail feedback feature was added, students' perceptions of the electronic portfolio were more favorable than for the paper. Initially, students did not optimally use the electronic portfolio features to enhance the long-distance advising and comments reflected their dissatisfaction at not being able to meet face-to-face with the advisor. This too improved as students gained familiarity with the electronic system. The overall assessment of the clerkship and portfolio experience was not affected by this piloting of an electronic portfolio. In 2005 randomization ended and when given a choice, all twenty of this cohort opted for the electronic version.

SUMMARY: The electronic portfolio is rapidly becoming successful at promoting an interactive learning experience for students with timely feedback. When given a choice, students opt for the electronic version. However further data is needed to determine whether feedback perceptions will improve significantly.

THE ALCOHOL CLINICAL TRAINING PROJECT: A FREE ONLINE CURRICULUM FOR USE BY GENERALIST CLINICIAN EDUCATORS. D. Alford[1]; S.E. Chapman[1]; C. Dubé[2]; N. Freedner[1]; R. Schadt[3]; R. Saitz[1]. [1]Boston University Medical Center, Boston, MA; [2]Brown University, Providence, RI; [3]Boston University School of Public Health, Boston, MA. *(Tracking ID #131776)*

WEBSITE URL: www.mdalcoholtraining.org

BACKGROUND: Physicians receive little effective education regarding alcohol problems. The web-based Alcohol Clinical Training (ACT) curriculum is patient-centered and evidence-based and is intended for use by generalist clinician educators. The curriculum addresses the clinical skills needed for screening and brief intervention for culturally diverse patients with alcohol problems. The intended audience for this curriculum is generalist clinician educators; the materials are to be used with their learners: students, residents and practicing clinicians.

CONTENT: The purpose of this free, online curriculum is to offer generalist clinician educators a practical approach to teaching screening and brief intervention for alcohol problems in medical settings. Emphasizing cross-cultural efficacy, the curriculum teaches skills to: ask about alcohol use; assess severity and readiness to change; advise cutting down or abstinence, and assist in goal setting and further treatment when necessary; arrange follow-up to monitor progress; and, assure cross-cultural efficacy. The website includes a PowerPoint slide presentation with trainer notes, expert audio narrative of the slide presentation, and 3 embedded physician/patient video cases demonstrating different levels of alcohol severity. Materials are adaptable to varied settings and audiences (grand rounds, morning report, preclinic conferences). Pre- and post-tests are also provided.

DESIGN: The main components of the curriculum are the PowerPoint (PPT) slide presentation [which is available in several forms: native PPT (with and without audio), slides as web pages with video links, or videos available as streaming and as downloadable files for presentation] and 3 streaming video cases; videos and slides are intergrated with direct hyperlinks within the file. Videos depict simulated patient/physician interactions, followed by the patient's reactions to the encounter. Faculty feedback about the curriculum is encouraged via an open-ended online feedback form and a structured evaluation form which can also be completed online. Authoring software used to develop the curriculum incuded: Final Cut, Adobe Premiere, Real Media streaming software, Adobe Audition software, Macromedia Dreamweaver, DVD studio and Roxio Toast.

EVALUATION: Of physician educators who were trained to use the curriculum, 100% rated the design and content of the curriculum as very good to excellent, and many indicated that they would use it in varied settings, including resident and medical student conferences, CME courses, precepting, and inpatient attending rounds. Visitors to the website completing online evaluations have also rated the design and content of the curriculum as very good to excellent, and indicated that they would use these materials in resident conferences, CME courses, and inpatient attending rounds.

SUMMARY: The ACT website offers generalist clinician educators training tools for teaching alcohol screening and brief intervention with a focus on clinical skills and cross-cultural efficacy. The availability on the web, the flexibility to use video and audio with and without slides for varied audiences and teaching settings, and the tailoring to the generalist clinician educator audience allow widespread use.

THE PROFESSIONAL DEVELOPMENT PORTFOLIO: REFLECTION-IN-ACTION. A.L. Kalet[1]; J.J. Sanger[1]; S. Hubbard[1]; J.M. Chase[1]. [1]New York University, New York, NY. *(Tracking ID #136142)*

WEBSITE URL: tools.med.nyu.edu/profportfolio

BACKGROUND: The ACGME and LCME have challenged us to evaluate professionalism but more sophisticated assessment strategies are needed. We designed, immplemented, and evaluated an on-line Professional Development Portfolio (PDP) for all entering medical students (class '07 N=160), explicitly aimed at preparing future physicians to engage in self-reflection on professional behaviors.

CONTENT: After logging on, students view their individualized portfolio matrix displaying all required 1st year submissions. Students upload the appropriate document, write a brief 2-3 sentence reflection and submit. PDP content includes: standardized materials (e.g. essays, standardized patient interactions checklists, self, peer, patient, and faculty assessments) as well as individualized materials (e.g. evidence of community service and leadership activities) and comment cards, filed by others, either praising or expressing concern. There is