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	<b>* recipient of small grants award</b>	

## **No Medical Student Left Behind: A proactive counseling approach to enhance student performance**

Jerry H. Alexander, Ph.D.

Director, Academic Information Services, U. North Texas Health Science Center

Peter Lin, M.S.

Web Administrator

Rebel Jones, B.S.

Manager, Evaluation and Testing Services, U. North Texas Health Science Center

### **The Problem**

Medical school admission committees select the best and brightest students from their applicant pools. Yet, despite the best efforts of admission committees some students fail to achieve as expected. Typically, as students advance in the curriculum, patterns of performance emerge but are not closely monitored because a complete picture of each student's progress is not available. If a student self-refers for guidance on an academic or personal problem, the counseling faculty member often has incomplete or out-of-date information about the student and thus may suggest a less than optimal solution.

### **The Solution**

The University of North Texas Health Science Center at Fort Worth, Texas College of Osteopathic Medicine has instituted a pro-active counseling program whereby a dean meets periodically with each student to review the student's progress in the curriculum. A complete, up-to-the-minute, history of the student's performance is available online to the dean and includes admission variables, medical school performance variables and external examination scores, with national benchmarks.

### **Evaluation**

Although the program has recently been instituted, early results are positive and indicate that the counseling and early intervention are effective in preventing future performance problems.

## **Longitudinal Neuropsychiatry Ambulatory Clerkship Pilot Impact on Cost and NBME Scores.**

Schiffer RB, Stanley KA, Robinson V, McMahon T, McCurdy F, and Bickley L.

Investigators at Texas Tech University Health Sciences Center School of Medicine in Lubbock compared outcomes from a year-long longitudinal neuropsychiatry ambulatory clerkship to standard 6-week block rotations in 2005-2006. Twelve students volunteered to leave their concurrent clerkship block rotation to attend a pilot ambulatory neuropsychiatry clinic a half-day per week, and were compared to 22 students in the traditional block rotations. Hypotheses were that students in the pilot would show: improved satisfaction, increased recruitment to psychiatry, improved NBME shelf exam scores, improved interpersonal and interviewing skills, and cost efficient practice. Outcome measures planned for both groups were: a student interest survey in psychiatry; NBME scores in Psychiatry; OSCE ratings; and revenues generated and costs computed. Baseline characteristics of the study and control groups were: #honors in MSI Neuroscience course—1/12 (8.3%) o 3/22 (13.6%); MSI Neuroscience NBME scores—87.0 vs. 88.25; Year 2 GPA—3.07 vs 3.18; USMLE Step 1—190.66 vs 203.52; Year 2 Psychiatry course grade—94.0 vs 92.4. Results were: revenues from the clinic pilot=\$58, 368 vs expenses of two faculty supervisors @ \$80,000 for loss of \$21,632; psychiatry interest survey—subject beginning vs ending mean score 24.6 vs 23.9, control ending mean score 24.33, subject beginning vs ending choice of psychiatry as career=4 (41.6%) vs 2 (16.6%), control=6 (28.6%); NBME scores subject vs control—74.5 vs 71.3 (mean on Amarillo and El Paso campuses 2004-2005 73.9; national mean all US medical schools 76.2 with SD 8.5).

**Conclusions:** Pilot students were at lower academic standing but achieved higher NBME shelf exam scores compared to controls. Interest in psychiatry did not appear to increase, although the sample was small. Net loss for costs of a faculty-student clinic were manageable and less than expected. Anecdotal evidence and free-text comments showed that students had high satisfaction with the longitudinal clerkship and longitudinal patient relationships but OSCES were not a satisfactory measure for this outcome.

# Analyzing the Structure of the Conversations Between Doctor and Patient

Robert J. Bulik, Ph.D., Karen E. Szauter, M.D., Gurjeet S. Shokar, M.D.

**Problem Statement:** Despite technological advances, history-taking and the physical examination remain a major component of clinical competence and diagnostic ability. Previous studies estimated that 50% - 70% of diagnoses were dependent on the quality of data collection and integration. In this project, we focused on the impact poor verbal communication – skills in listening and speaking, can have on physicians and patients. Physicians expect their patients to provide accurate health histories and descriptions of their symptoms, as well as to listen and to comprehend verbal instructions. However, poor communication can affect: a) patients' ability to communicate their health history; b) physicians' ability to adequately explain a diagnosis and prognosis; and c) patients' lack of recognition of the need and value of healthcare screening. The aim of this project was to change the focus of instruction on communication skills from targeted and discrete topics (*breaking bad news* or handling the *garrulous patient*), to a more expansive examination and understanding.

**Project Methods:** We used the construct of *Conversation analysis* (CA) to provide a framework for taking this broader look at communication skills through embedded videos in two Web-based clinical cases. CA is a rigorous research method of analytic induction with a fifty-year history in which participants display understandings of interactional circumstances or practices that organize events within individual communication actions. Clinical case development utilized the Design-A-Case (DAC) template. The DAC template has the capability of creating WEB-based clinical cases and embedding audio and video clips within the web pages of the clinical case as it progressively unfolds. We developed two Web-based clinical cases for Family Medicine clerkship students that included: 1) a narrative section that described the potential for doctor-patient communication problems, and provided a rationale for *conversational analysis*; 2) two clinical case with seven video scenarios containing scripted conversations between a doctor and a standardized patient (SP); 3) integration of specific CA components for analysis; and 5) open-ended questions for focusing on specific aspects of the scripted doctor-SP conversation.

**Outcomes:** On a regular and formalized basis we utilize clinical faculty and educators in the Department of Family Medicine in a *group* peer review process for all of our Web-based cases. This group sits together and views drafts of Web-based clinical cases for the clerkship to ensure quality and to recognize faculty efforts. We utilized this process to critique the two cases on the clinical materials presented, along with the instructional methodology on communication through the embedded doctor-SP videos. We also obtained clerkship student feedback on the appropriateness of the clinical materials and video inserts for their level of training. Both processes revealed: 1) an enthusiasm for our approach; 2) an appropriateness of the instructional materials presented; and 3) minor suggestions for improvement. Our next step will be to add these two cases to our growing list of Web-based clinical cases our clerkship students complete and evaluate. Various aspects of the Web-based cases are also used in our end-of-clerkship Objective Structured Clinical Exam (OSCE) to assess student learning.

**Implications:** The overall goal of this project was to create an instructional methodology to improve medical school training in doctor-patient communication. Today's physicians need to understand the structure and flow of the doctor-patient communication encounter in order to assess verbal comprehension and to remain patient-centered, yet to efficiently use available clinic time. These Web-based clinical cases for Family Medicine clerkship students reinforce and expand upon communication skills training that typically begin in the first year of medical school.

Integration of Gross Anatomy and Introduction to Clinical Medicine, Len Cleary<sup>1</sup> and Edie Shulman<sup>2</sup>, Depts. of <sup>1</sup>Neurobiology and Anatomy and <sup>2</sup>Internal Medicine, The University of Texas Medical School Houston, Houston, TX, 77030.

Integration is a key feature of modern medical school curricula. In a competency-based curriculum, graduates will be evaluated on their performance in the clinical environment rather than their completion of required courses and clerkships. Therefore, medical curricula are increasingly designed to foster integrative decision-making from the first semester onward.

In the fall of 2005, the Introduction to Clinical Medicine (ICM) course was reorganized to coordinate physical exam sessions with the Gross Anatomy (GA) course. For example, when students were dissecting the thorax, they practiced obtaining vital signs and performing the cardiopulmonary exam on standardized patients. Student responses were mixed. Evaluations in both courses show that students appreciated the educational advantages of coordinating the courses, but some did not want to be pulled out of Anatomy lab for the ICM sessions. Faculty observed that students who had dissected a region appeared to do better on the physical exam of that region. In addition, both course directors recognized that coordination of knowledge objectives between the courses could be improved.

In the fall of 2006, scheduling conflicts were remedied by adopting a rotational dissection system for the Anatomy lab. Eight students were assigned to each tank, but only four dissected in a scheduled lab session. This decreased scheduled lab time for an individual student by approximately half, and increased the amount of time available for the standardized patient exercises. Consequently, five standardized patient training sessions were scheduled in the fall semester rather than three. In order to master the physical exam, students must have a strong grasp of surface anatomy, using both palpable landmarks and surface projections of organs. Therefore, we have begun to coordinate the knowledge objectives in the two courses. For example, selections from the ICM textbook (Bickley and Szilagyi, Bates' Guide to Physical Examination and History Taking) are now assigned in GA.

An important outcome of this effort has been to give the ICM course a greater presence in the curriculum by increasing the number of sessions. As a result, students appear to be more enthusiastic about ICM than in the past. At the end of the year, we expect to see enhanced performance on the OSCE exams. Students seem to be in favor of the revised Anatomy schedule because it provides more time for study while still providing the benefits of the dissection experience. This is an ongoing project that will require continuous assessment of student performance on exams as well as student response in course evaluations.

## The Art of Observation

Thomas R. Cole, Ph.D.

Director, The John P. McGovern, M.D. Center for Health, Humanities, and the Human Spirit

University of Texas-Houston Health Science Center School of Medicine

The art of astute clinical observation, as part of the broader clinical skill of physical diagnosis, appears to be in progressive decline in American medical education. Not only does technology continue to replace large elements of human to human interaction, but the senior clinicians that taught these traditional observational skills are also disappearing. But can the Fine Arts, and particularly painting and photography, also teach students how observation of the human and humane is undertaken, and can these skills be developed and translated into usable clinical ones for future doctors?

Since 2003, the University of Texas Health Science Center – Houston, Medical School has partnered with the Houston Museum of Fine Arts to offer a twice a year elective course, The Art of Observation (AoO). AoO is offered on three full evenings, to a total of fifty medical students. After a brief introduction by Medical School faculty, students are divided into small groups and led by Museum docents to review and analyze ‘unknown’ works of art, primarily involving some element of portraiture. The students are continually asked ‘what do you see’ and are asked to expand and even extrapolate their observations into broader meaning. The groups are then reunited and the works are reanalyzed by the entire student body and the faculty and docents. By the second meeting, photographs of real patients with medical diagnoses are also presented and the process is repeated. This past year, a third session concluded with the use of standardized patients (SPs), acting out subtle vignettes of human drama in front of all participants. These performances were also observed, analyzed and written up by the medical students. Moreover, a group of students who never took the AoO were recruited to observe the same SPs in an effort to compare and contrast how they scored relative to the students who took the AoO.

In the spring of 2006, 24 students completed the AoO course. In the last session they were asked to document what they observed in four different scenarios. Concurrently, a group of first and second year medical students who had never taken the class were recruited to complete the identical exercise with the same SPs. Below are the four scenarios that were developed for this study:

Scenario One: A good looking middle-aged woman from an upper income background. She is posed reading a hoity magazine and you are able to see both the cover as well as her finely manicured	Scenario Two: Depressed man. He does not care about his appearance or the world. He is posed with a downward glance. He doesn't more a hair while waiting to see his	Scenario Three: Impatient Man. Posed in chair with elbows on knees and one foot tapping up and down. Type-A personality. Doesn't have the	Scenario Four: Lower income woman who has neither the time nor money to be at the doctor's office. As such she is both angry and frustrated.
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nails. Her legs are crossed under her at the ankle. She is calmly waiting for her doctor's appointment	doctor.	time to be a doctor's office!	She waits for the doctor with her hand on her head. She is wearing her work uniform
<b>Distinguishing features:</b>			
Well coiffed hair (in a preppy hairdo)	Messy hair— appears dirty	Nice suit	No jewelry
Manicured nails with either polish or French manicure	Unshaven	Lapel pin Tie clasp/chain	No make-up
Expensive, tailored outfit	Dirty finger nails	Nice leather shoes	Clean short nails
Jewelry: <ul style="list-style-type: none"> <li>• Large diamond ring</li> <li>• Another tasteful ring</li> <li>• Large diamonds studs or other earrings</li> <li>• Tasteful bracelet</li> <li>• Expensive watch</li> <li>• Necklace (if appropriate)</li> </ul>	Untucked dress shirt (must be one that is usually tucked in): <ul style="list-style-type: none"> <li>• Worn</li> <li>• Wrinkled</li> <li>• Sweat stains or sweat in the underarm</li> </ul>	Cell phone on belt	Ugly worn work shoes
Expensive leather handbag	Stain on pants	Nice briefcase	Clean uniform – unironed
Upscale magazine (Paper)	Frayed cuffs on pants	Glasses	Clean hair, pulled back
Starbucks cup	Different colored socks (one argyle, one solid)	Manicured nails	
Finely done subtle make-up: <ul style="list-style-type: none"> <li>• Lipstick</li> <li>• Mascara</li> <li>• Light eye shadow</li> <li>• Blush</li> </ul>	Untied worn shoes		
Beautiful leather heels			
<b>Distinguishing Behaviors</b>			
Legs crossed at the ankle	Expression sad	Elbows on knees	Head in hands
Excellent posture— sitting with back straight and shoulders back	Shoulders slumped	Foot tapping	Sighing
Slight smirk on	No movement	Eyes frequently	Pacing then

face/superior look		diverted to watch	sitting
	Downward glance	Takes cellphone out to look at time	Shrugging shoulders in frustration
	Rubs face	Slight frown	Occasionally shaking head back and forth
		Thumbs tapping	Tears
		Deep breathes	Quivering lip
		Takes out leather portfolio and looks through it then slams it	Crosses leg
		Taps pen on portfolio	Tap foot
		Puffs cheeks out	Wraps self in arms
		Crosses leg and shakes foot	Takes tissue out of pocket and daps eyes

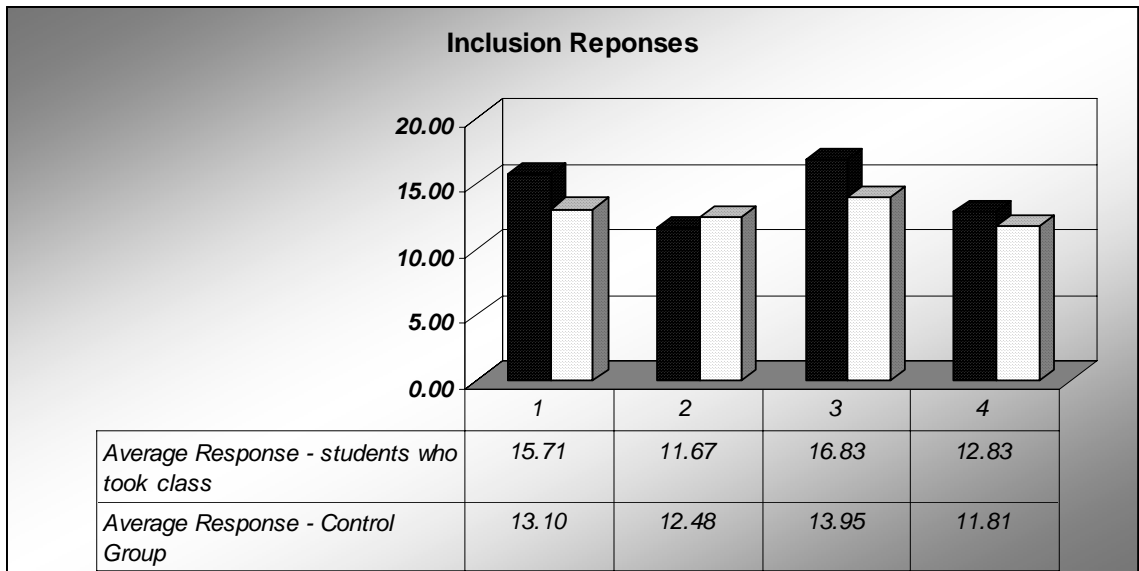
### Analysis

A total of 24 students completed the AoO class and a total of 21 first and second year students were recruited and successfully completed the identical exercise.

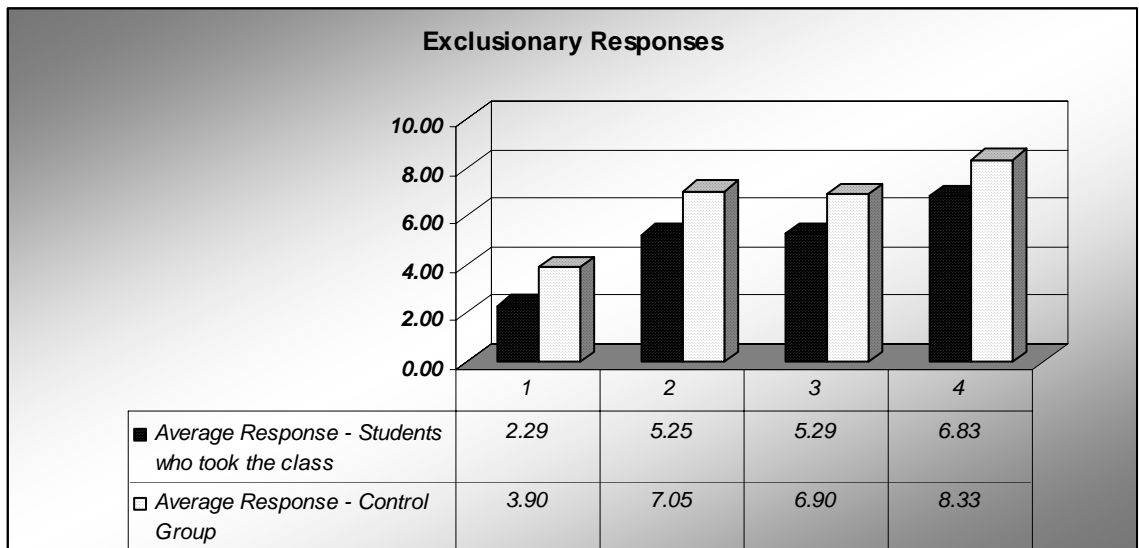
The student responses to “document what you see” were broken in to one of two categories. The first category included objective responses such as those contained in the above list. Additionally, observations such as gender and color of garments were also included in this group. The second category was those observations that were subjective such as “appears angry” or “seems depressed”. Since one of the objectives of the class was to make students aware of the difference between objective and subjective observations, the latter were excluded from the totals.

### Results

In summary, the group of students who took the Art of Observation class was able to identify more inclusionary items than the control group. With the exception of scenario #2, the students who took the AoO class were able to identify on average more objective elements of the SPs. Although we did not hypothesize how much better the students who took the class would do on this exam, the results are not statistically significant.



Likewise, the students who did not take the class identified more subjective features than the students who took the class:



Of interest is that each subsequent scenario (see above) had fewer characteristics and a greater number of identifiable behaviors such as “tapping foot” or “placing head in hands”. There is a correlation between the number of characteristics and the number of subjective responses recorded by the students suggesting that actions, rather than characteristics prompt inferences more so than characteristics.

## **USING TEAM LEARNING (TL) ON A PEDIATRIC IN-PATIENT SERVICE: AN EXPLORATORY ANALYSIS**

Johnnie P. Frazier, MD, The University of Texas Medical School at Houston

**Objective:** To compare the benefits of team learning and lecture style on an in-patient pediatric service and levels of learner satisfaction with these two types of instructional strategies.

**Methods:** After attending a lecture and team learning session, a 15-item Likert scale evaluation form comparing the benefits and learner satisfaction of TL and lecture style was administered to third year medical students and first year residents rotating on the pediatric in-patient service.

**Results:** Forty-seven third year medical students, fourteen first year residents, and two faculty observers completed the evaluation forms, after attending the didactic lecture and team learning sessions. Ninety-three percent of the learners agreed that the TL session was effective and provided valuable information. The TL style was compared to the lecture style. Ninety-one percent agreed that the TL style was more effective than the lecture style. Ninety-one percent of the learners preferred the TL sessions on the in-patient service to lectures. When the learners were asked if they preferred lecture style 26% agreed, whereas 59% disagreed, and 23% were neutral. Over 90% of the learners felt the TL style stimulated discussion among team members and relevance to high quality learning.

**Conclusion:** The results suggest that team learning is potentially a highly effective learning strategy on a pediatric in-patient service. Learners may benefit from active participation in learning teams with opportunities to apply their knowledge in controlled problem solving situations. This evaluation shows that learners enjoy and prefer TL to lecture style, however, a small percentage of learners prefer the didactic lecture style. The results show an overall positive response to TL from learners and faculty on the pediatric in-patient service. Additionally, the results suggest that current approaches using didactic lectures in this setting are less effective and innovative learning strategies are needed to stimulate and engage the learner. The results from this study should provide an impetus for further exploration of the feasibility of implementing team learning strategy within the pediatric in-patient setting.

## **Web-based VideoRecorded Evaluations to Assess Resident Competencies**

Web-based video is easier than you think!

Virginia Niebuhr, PhD, José Gonzalez, MD, JD, MS.Ed., Patricia Beach, MD  
Department of Pediatrics, University of Texas Medical Branch (UTMB)

This project represents a technology innovation for evaluation of residents' competencies. In our Pediatric Residency program, we have for several years had an evaluation plan which includes videotaping residents conducting health supervision (well-child) visits, then using the tapes for faculty evaluation and feedback on the skills of history-taking, examination and developmental counseling. This evaluation process includes resident self-evaluation, direct observation by faculty, feedback, and opportunity for repeated evaluation over time. With support from the UT Systems Medical Education Small Grants Program, we have now enhanced this process by moving to digital videorecording and web-based videos for much easier review. No longer are videotapes passed along between participants nor are participants restricted by VCR locations. Our project report will include information useful for other medical education programs on the necessary costs and the required steps for digital web-based video. We are pleased to report that this process is easier and less expensive than you might think! Our next step will be creation of faculty development activities designed to sharpen faculty assessment and feedback skills.

## **Using Unannounced Standardized Patients to Remediate Residents' Professional Behavior and Skills**

**Participants:** Allison R. Ownby, PhD, MEd, Eugene V. Boisaubin, MD, Mark Farnie, MD, Tamara L. Owens, MEd, and Virginia Greene, B.A.

The University of Texas Medical School at Houston Internal Medicine Residency Program has utilized unannounced standardized patients (SPs) since 2002 to assess professional behavior and communication skills of its residents. These encounters provide information regarding resident skills at one time point. Although residents receive individual feedback, they do not receive individualized learning plans and are not reassessed to determine improvement in their professional behavior and communication skills.

The purpose of this project was to enhance the residency program's use of unannounced standardized patients. Residents identified during their intern year as performing below a minimal competency level in their professional behavior and communication skills were visited by an unannounced standardized patient in the fall of their second year to establish baseline scores of their professional behavior and communication skills. Methods for identifying residents included a review of their residency performance folder, evaluations from attending faculty, medical students, and possibly peers. A small control group of randomly selected PGY-2 residents performing at a minimal competency level or above in their professional behavior and communication skills were also assessed. Residents performing below 70% on any component of the unannounced encounter created individualized learning plans designed to improve their skills. Residents were reassessed in the spring with another unannounced visit to determine improvement or change in their skills. A total of 16 residents were assessed in the fall and 12 in the spring. Means are reported and suggest improvement over the course of the year.

In addition to the assessments detailed above, a focus group with the participating residents was held at the midpoint of the project to assess resident perceptions of the usefulness of unannounced visits in improving their skills. Additional feedback was gathered from residents during the discussion of their learning plans with the program directors. Primary feedback from the residents included providing more explicit expectations regarding history and physical exam processes/skills within the ambulatory setting as well as suggestions to provide this type of feedback earlier in the training program. Residents felt that while the information was useful, it was almost provided "too late" for them to refine habitual behaviors. Accordingly, plans for future unannounced SP encounters will shift the assessment to the intern year in an effort to provide feedback to the residents earlier in their training program.

## SUPPLEMENTING & ENRICHING HYBRID MEDICAL SCHOOL COURSES

Fabrizia Faustinella, MD<sup>1</sup>, Edie E. Shulman, MD,<sup>2</sup> Course Directors, Cathy Courtney, BSEd, MPH, and Lenda Robinson,<sup>Course Coordinators</sup>, Department of Internal Medicine, The University of Texas Medical School Houston, Houston, TX, 77030.

There has been growing demand and emphasis to streamline medical school course development. Various methods have proposed to decrease paper syllabi, save faculty lecture time, increase electronic learning, and yet increase adult learning principles and problem-based learning. UT Medical School at Houston Course Coordinators (Cathy Courtney and Lenda Robinson) manages the courseware and logistics for Introduction to Clinical Medicine (ICM) and Physical Diagnosis (PD). Course Coordinators collaborate with Course Directors that wanted to improve access to educational material using an electronic format which transitioned first year to second year medical students (MS1s → MS2s) in physical exam and professional competencies in year-long courses. Blackboard "elearning" software and resources were utilized to hybrid and supplement traditional courses which manage over 200 student users per year. Working closely with Course Directors who are requires accelerated speed-up of Blackboard courseware and support functions. The use of e-learning requires new thinking and strategies about curricular design and Blackboard delivery. Since some students are auditory, some visual, and some kinesthetic, the mix of methods should increase retention by all learners. How to persuade students to switch from big paper syllabi to Blackboard? Innovations via electronic syllabus converted over 300 pages to none and all documents are now available through Blackboard.

This poster presentation will describe to faculty and educators the "show and tell" methods for Blackboard users to gain ideas and applications to organize multiple faculty lecture materials, PowerPoint to PDF files, deal with copyright issues and external documents, pagination, using embedding media such as images, animation and video into the Blackboard system. Samples will be provided which illustrate how students achieved greater computer proficiency. Faculty working with course coordinators to set clear expectations for student users is a key success factor. Students need to know the importance of self-study and electronic accessibility; receive instruction on usage and samples of how they will be evaluated. A Continuous Quality Improvement (CQI) philosophy contributes to customizing medical school instruction and redesigning Blackboard as needed enables students to use functions we want them to use, disable functions they don't use and navigate the tools, content and assessment areas. Ways in which ICM and PD courses with multiple faculty and multiple challenges were revised through Blackboard will be summarized and results provided (on paper ppt slide handouts and via electronic posting). Key findings reveal improved student and faculty morale, higher scores on tests and the Objective Structured Clinical Exams (OSCEs). Students' satisfaction with the courses is higher than previous evaluations, with an overall 80% satisfaction rating. Attendance at lectures was high but review of lectures via Blackboard was strikingly increased. (> or = 84%). Interested discussants will gain session useful, practical information to use Blackboard to save time, supplement traditional lectures with elearning, cut costs and improve a transition between a first year to a second year course.

## **Faculty Development Program and Commitment-to-Change: Impact on Physician Teaching Behavior**

Principal Investigator: Sharyl Santema, MD  
Pediatric Clerkship Director; Scott & White – TAMHSC-COM

Co-Investigator: Sandra Oliver, PhD  
Director of Medical Education Research and Development  
Office of Educational Development; Scott & White – TAMHSC-COM

**Specific Aim:** The specific aim of this descriptive study was to measure the impact of a faculty development program, with a commitment-to-change, on clinical teaching of medical students and residents.

**Significance:** A purpose of faculty development programs is to improve teaching behaviors. The Accreditation Council for Continuing Medical Education Essentials states that continuing education activities must evaluate program effectiveness. For exemplary compliance, programs must evaluate consistently that educational needs are met and applied in practice (ACGME Resource Materials, 2006, pg 15). Although physicians who practice in academic settings are encouraged to attend faculty development programs, few studies have evaluated the effect of attendance at a program on change in physicians' teaching behaviors. This study evaluated the impact of a one-day faculty development program on faculty's self-perceptions of immediate change in learning and long-term change in teaching behaviors. To facilitate long-term behavior change, written commitment-to-change was asked of the participants.

### **Design and Methods:**

**Sample:** The convenience sample included 27 clinical medical teaching faculty. Sixteen faculty members attended a faculty development program, "The One Minute Preceptor and Clinical Teaching Methods."

**Methods:** Prior to and after the program, participants were asked to complete a 16-item self-assessment of their knowledge and clinical teaching competencies. This data was utilized to evaluate the immediate impact of the program on the participants' understanding of their use of innovative clinical teaching techniques in their teaching behaviors. After the program the participants were asked to reflect on the educational experience and to identify at least one thing that they intended to do or change as a result of the program. In identifying concepts, the participants committed to integrate the program content into their teaching competencies. The investigators reminded the participants monthly of their commitment and at six-months requested a self-report by the participants.

A second measure of the impact of the faculty development program on physician clinical teaching behavior was student evaluations of faculty clinical teaching. Medical student evaluations of clerkships were analyzed for changes in student assessment of the clerkship for the academic years before, during and after the program. Resident exit evaluations were analyzed for changes in resident assessment of faculty clinical teaching prior to and after the faculty development program. The effect of interpersonal aspects was measured by comparing faculty who did not attend the didactic sessions to faculty who attended the didactic sessions and made a commitment-to-change intervention.

**Results:** Most of the participants were pediatricians (85%) with one family medicine physician (4%) and three internists (11%). Eleven of the 16 (69%) self-assessment items showed significant improvement when comparing before and after program scores. All of the participants identified at least one concept to integrate into their clinical teaching. The most common concept was 'timely and positive feedback' (n=9) followed by 'wait for student to respond to questioning' (n=5). The six-month self-report by participants of their commitment-to-change showed that 80% of the commitments were implemented. The most commonly listed reason for not implementing a change was lack of time during clinical teaching.

Because the participants were predominately pediatricians, clerkship and faculty evaluations were limited to pediatrics. Medical student evaluations of the pediatric clerkship, as reported by the Curriculum Study Group showed consistent improvement: 2003 (pre-program) - "very good overall review," 2004 (year of program) - "excellent review," and 2005 (post-program) - "great review with over 90% of students rating the clerkship outstanding or above average." Resident exit evaluation of individual participants showed statistically significant differences ( $p=.000$ ) between 2004-2005 and 2005-2006. However, there was no statistically significant difference between the ratings of the faculty who attended the program and those who did not.

**Conclusion:** Faculty development tied to participant commitment-to-change makes a lasting difference in the quality of clinical teaching as demonstrated in participants' self-assessment, medical student clerkship evaluations, and resident faculty evaluations. Learning occurs in faculty development programs and new knowledge is transferred to clinical teaching. Faculty who attend faculty development programs may have an interpersonal impact on their colleagues as demonstrated in the overall improvement of clerkship and faculty exit evaluations.

## **Assessment and Remediation of Medical Students' Clinical Skills**

James Wagner, MD  
Associate Professor, Internal Medicine  
UT Southwestern Medical School

**BACKGROUND:** Medical schools are entering a “clinical skills” era of medical education. In the past, evaluation of medical students was based on scores received via demonstrated knowledge on standardized written examinations. Today, the National Board of Medical Examiners has added a clinical skills examination to the medical licensing process (USMLE Step 2 CS) with emphasis upon patient interviewing, interpreting findings and making diagnoses after interaction with standardized patients.

**OBJECTIVE:** To develop, implement and evaluate a program for remediation of medical student(s) who have experienced difficulty with clinical skills as measured on objective standardized clinical examinations.

**METHODS:** Students at UT Southwestern take an intense standardized patient clinical skills examination twice during medical school: once at the end of the second year and once at the beginning of the fourth year (MS4 PCSE). Students who fail these examinations had an opportunity at each class level (ROCSE for MS2 PCSE failures and RCSE for MS4 PCSE failures) to participate in a remedial clinical skills exam to determine its effectiveness on future performance outcomes.

The outcome of interest for this abstract was performance on MS4 PCSE, the RCSE, and the USMLE Step 2 Clinical Skills examination.

**RESULTS:** In 2005, there were 10 PCSE failures. The RCSE was not available this year. In the group who took the PCSE, there were seven Step 2 CS failures. Students who failed the PCSE had a 50% chance of failing the Step 2 CS (i.e. PPV 50%).

In 2006, there were 15 PCSE failures. The RCSE was offered to each of these failures; 4/15 failures took RCSE. In the group who took the PCSE, there was only one person who failed the Step 2 CS. The low prevalence of Step 2 CS failures deflated the PPV of the PCSE tremendously (to 7%). All of the four students who failed the PCSE and took the RCSE passed the Step 2 CS.

85% of students reported that taking the PCSE helped them prepare for the Step 2 CS. 68% reported that the feedback they got from the PCSE helped them prepare for the Step 2 CS.

**CONCLUSION:** The PCSE has a PPV of 50% if prevalence of failure is 7%. The RCSE appears to help those who failed the PCSE pass the Step 2 CS. Students appreciate the PCSE and RCSE.