

# Medical Education Day 2007

The Haile T. Debas Academy of Medical Educators and the Office of Medical Education are proud to sponsor UCSF's Sixth Annual Medical Education Day on Monday, April 23, 2007 from 11:00 to 5:30 pm in the Millberry Union Conference Rooms. We are pleased to continue a faculty exchange with the Academy at Harvard Medical School, and extend our welcome to Drs. Graham McMahon and Steven C. Schlozman.

Education Day 2007 features 49 abstracts covering a variety of important issues undergraduate, graduate and post-graduate medical education, a 50% increase from 2006. Seven have been selected for oral presentation based upon their collective relevance to the largest audience of medical educators.

This year the AME Scholarship Committee is introducing a new opportunity to acknowledge excellence in educational scholarship - the AME Cooke Awards for the Scholarship of Teaching and Learning. Awards will be given to projects in two categories: outstanding curriculum development project and outstanding hypothesis-driven educational research project. Award nominations were made to top scoring projects following blinded peer review of all education day abstract submissions. Award winners were determined by a ballot in which Scholarship Committee members ranked the nominees' blinded abstracts. Nominated co-authors on the committee were not permitted to rank abstracts in their award category. Awards will be announced at the conclusion of today's plenary session.

We again offer workshops in medical education and wish to thank the four faculty members who generously agreed to support Education Day through their efforts. The workshops are titled:

- Moving Educational Activities into Scholarship, by David Irby, PhD
- Concept Mapping and Other Alternatives to Surveys, by Arianne Teherani, PhD
- Beyond Abstracts: Getting Your Work Published, by Maxine Papadakis, MD
- The Effective and Engaging Large Medical Lecture (It Doesn't Have to be an Oxymoron), by Steven C. Schlozman, MD

This book captures some of the creativity and excitement being generated across the medical education continuum at UCSF. We extend thanks and congratulations to our community of medical educators for contributing so generously to this year's Medical Education Day.

Lee Learman, MD, PhD  
Chair, Scholarship Committee

Molly Cooke, MD  
Director  
Academy of Medical Educators

# Workshops in Medical Education

## **Moving Educational Activities into Scholarship**

**David Irby, PhD**

An overview of the 2006 Group on Educational Affairs of the AAMC consensus conference on Educational Scholarship and introduction to the five educator roles of teacher, curriculum developer, assessor, mentor/advisor and administrator/leader. Based on this introduction, participants will identify issues related to considering educational activities as scholarships. Subsequently, participants will review proposed scholarship for each of these roles to judge if the case can be made for scholarship.

## **Concept Mapping and Other Alternatives to Surveys**

**Arianne Teherani, PhD**

Currently surveys are used as the predominant measure of attitudes and responses to these attitudinal surveys tend to be prone to social desirability. The purpose of this session will be to introduce alternatives to surveys for measuring attitudes as well as knowledge and skills. The alternative discussed in this one-hour session will be concept mapping. Learners will practice developing a concept mapping exercise and a scoring rubric. Time permitting other alternatives to surveys will be introduced and briefly discussed.

## **Beyond Abstracts: Getting Your Work Published**

**Maxine Papadakis, MD**

In this workshop participants will be introduced to journals in medical education and the types of articles that they take. This will be accompanied by a discussion on publishing from the editors' perspective. Strategies for approaching editors' will be suggested. Tips about the submission process will be given.

## **The Effective and Engaging Large Medical Lecture (It Doesn't Have to be an Oxymoron)**

**Steven C. Schlozman, MD (Harvard Medical School)**

Participants will address the dilemmas of the pre-clinical medical educator: how to embrace the lecture setting for its efficiency and its logistical advantages and how to engage students in what can be a wonderful and exciting experience. This workshop will stress the elements that help to ensure that the large medical lecture is enjoyable, thought provoking, and *even fun* for both the instructor and the students. By the end, participants will hopefully have greater confidence and satisfaction as they prepare their own lectures and curricula for our very fortunate medical students.

# Abstracts of Oral Presentations and Posters

Presented at the

## Sixth Annual UCSF Medical Education Day

Monday, April 23, 2007  
Millberry Union Conference Rooms



## ORAL PLENARY PRESENTATIONS

3:15	<b>FIRST CLERKSHIP: A NOVEL TRANSITION TO THE CLINICAL YEARS</b> Leila Alpers, Varun Saxena, Duncan Henry, Margo Vener .....	7
3:27	<b>A WEB-BASED PALLIATIVE CARE COMMUNICATION CURRICULUM</b> Eva H. Chittenden, Susannah Clark, Kathleen Puntillo, Steven Z. Pantilat .....	8
	<b>EVALUATION OF A WEB-BASED PALLIATIVE CARE CURRICULUM: A WORK IN PROGRESS</b> Eva Chittenden, Cindy Lai, Karen Hauer, Patricia O’Sullivan .....	9
3:39	<b>MEDICAL STUDENTS’ USE OF THE STAGES OF CHANGE MODEL IN TOBACCO CESSATION COUNSELING</b> Judith J. Prochaska, PhD, MPH, Arianne Teherani, PhD and Karen E. Hauer, MD...	10
3:51	<b>STUDENT PERFORMANCE PROBLEMS IN MEDICAL SCHOOL CLINICAL SKILLS ASSESSMENTS</b> Karen E. Hauer, Arianne Teherani, Kathleen M. Kerr, Patricia S. O’Sullivan, and David M. Irby.....	11
4:03	<b>WEB-BASED EDUCATION IN SYSTEMS-BASED PRACTICE: A RANDOMIZED TRIAL</b> B. Price Kerfoot MD EdM, Paul R. Conlin MD, Thomas Trivison, PhD, and Graham T. McMahon MD MMSc .....	12
4:15	<b>PLACEMENT OF A FEMORAL VENOUS CATHETER</b> Janet Tsui, Michelle Lin, Susan Stroud, Adam Collins, Jeff Tabas .....	13
4:27	<b>ASSESSMENT OF PRACTICE IMPROVEMENT INTERVENTIONS TO REDUCE PERIOPERATIVE CARDIAC MORBIDITY AND MORTALITY</b> Arthur Wallace, M.D., Ph.D. ....	14



## **FIRST CLERKSHIP: A NOVEL TRANSITION TO THE CLINICAL YEARS**

Leila Alpers, Varun Saxena, Duncan Henry, Margo Vener  
School of Medicine, University of California, San Francisco

### **PURPOSE:**

The purpose of the First Clerkship is to increase practical clerkship skills, including patient data gathering, oral presentation, and knowledge of hospital systems in a group of medical students starting their clinical clerkships.

### **BACKGROUND:**

The literature indicates that students feel apprehensive about the transition to the clinical clerkships. In addition, faculty report that students are inadequately prepared in key competencies such as professionalism and team communication skills. Previously, our students have prepared for their clinical years with a classroom-based curriculum.

### **METHODS:**

We piloted a two-week experiential curriculum with fifteen students. They were organized into teams of five students and one attending and given an overview of basic third-year skills, including pre-rounding, data gathering, oral presentations, and note-writing. Special emphasis was placed upon professional communication skills, becoming familiar with hospital systems (computers, laboratory, radiology) and understanding the roles of healthcare team members. Students then practiced these skills over two weeks with their team.

### **EVALUATION PLAN:**

The students in the first clerkship were surveyed to determine if they had greater confidence in clinical skills when compared to control group students in the traditional curriculum. First clerkship students showed more improvement in all items measured, particularly in their feelings of confidence and competence with managing data from the medical record, note writing, and oral presentations.

### **DISSEMINATION:**

Presentation of the above results at the School of Medicine's Curriculum Committee Meeting and student enthusiasm for the curriculum resulted in the formation of a similar program for all incoming third-year students at UCSF. This is called the Transitional Clerkship. We plan to publish the results of our data.

### **REFLECTIVE CRITIQUE:**

As the first clerkship model is now being piloted for all rising third year students in the Transitional Clerkship, future curriculum development will be based upon feedback from the experience of the larger group and comparison of the two pilots.

## **A WEB-BASED PALLIATIVE CARE COMMUNICATION CURRICULUM**

Eva H. Chittenden, University of California, San Francisco School of Medicine; Susannah Clark, Dartmouth Medical School; Kathleen Puntillo, University of California, San Francisco School of Nursing; Steven Z. Pantilat, University of California, San Francisco School of Medicine

**PURPOSE:** Conducting conversations about advance directives is a common and important clinical responsibility. We created a web-based tutorial to teach medical trainees to have effective and compassionate resuscitation discussions.

**BACKGROUND:** Physicians and advanced practice nurses commonly engage patients in conversations about code status and goals of care. Despite the frequency of these conversations, teaching on this topic is highly variable. Traditionally, these skills have been taught through observation and role-play, or more commonly, they have not been taught at all.

**METHODS:** Based on a literature review and recommendations from national experts in palliative care, we designed and produced a web-based tutorial that provides a framework for advance directive discussions and illustrates common pitfalls and effective communication techniques. The website features multiple short videos of a physician discussing code status with a patient, with accompanying expert commentary on strengths and weaknesses of the physician's approach; multiple-choice questions with immediate feedback on the answers; and a personalized pocket reference card with key recommendations and sample phrases that learners can print out.

**EVALUATION PLAN:** Third year medical students from the Class of 2009 will be block-randomized by Medicine clerkship site to the web-based module or equivalent written materials. We will use the existing Advance Directive Standardized Patient Program to evaluate the web-based curriculum. We will analyze data from the standardized patient and student surveys.

**DISSEMINATION:** Educators at UCSF and Dartmouth Medical Schools will use the web-based curriculum in medical student, resident, and nursing education. The authors plan to submit the curriculum to MedEdPortal.

**REFLECTIVE CRITIQUE:** Authors have received advice and mentorship from the OET, ESCape, and from peers and faculty in the Teaching Scholars Program '05-'06. The web-based curriculum has been beta-tested by medical students, nursing students, residents, and palliative care nursing and medicine faculty. We have incorporated comments from reviewers when appropriate.

This curriculum-development project was supported by the CIT Instructional Grants Program, 2005-2006.

## **EVALUATION OF A WEB-BASED PALLIATIVE CARE CURRICULUM: A WORK IN PROGRESS**

Eva Chittenden, Cindy Lai, Karen Hauer, Patricia O'Sullivan  
University of California, San Francisco

**PURPOSE:** To evaluate the effectiveness of a web-based tutorial teaching advance directive discussions, we plan a block-randomized study of students in the third-year Medicine clerkship. We postulate that a web-based curriculum using video clips will be more effective than a comparable written curriculum.

**BACKGROUND:** Traditionally, advance directives discussions are learned through observation and role-play. These methods are time-intensive for faculty and an inefficient means of training large cohorts of learners. Social-behavioral learning theory suggests that video clips of these conversations with accompanying expert commentary will be a powerful instructional method.

**METHODS:** Third year Medicine clerks participate in the Advance Directive Standardized Patient Program (ADSPP) in which they discuss advance directives in two standardized patient (SP) scenarios. Prior to the ADSPP, students will be block-randomized by clerkship site to complete either the web-based or written curriculum. To assess the effectiveness of the two curricula, authors will compare scores on the SP checklists and on student self-assessment and satisfaction surveys. The study will run from May 2007 through April 2008, which spans third year for the medical school class of 2009. CHR approval will be obtained.

**RESULTS:** Based on data showing that a student self-assessment survey did not discriminate among learners, the authors replaced the self-assessment survey with four written questions that ask students to reflect on challenges in the SP conversations and how they might improve in the future. The authors are rewriting one of the SP scenarios to incorporate chronic, multi-system illness.

**DISCUSSION:** If the web-based tutorial is an effective teaching tool, we can use it to efficiently teach an important subject to large numbers of learners.

**REFLECTIVE CRITIQUE:** Authors have sought advice and mentorship from colleagues at ESCape, and from peers and faculty in the Teaching Scholars Program '05-'06.

Dr. Chittenden receives UCSF Academy of Medical Educators Innovations Funding to support this project.

## **MEDICAL STUDENTS' USE OF THE STAGES OF CHANGE MODEL IN TOBACCO CESSATION COUNSELING**

Judith J. Prochaska, PhD, MPH

Department of Psychiatry, University of California, San Francisco

Arianne Teherani, PhD and Karen E. Hauer, MD

Department of Medicine, University of California, San Francisco

**PURPOSE:** This study examined the extent to which medical students were prepared to provide stage-based interventions to treat nicotine dependence.

**BACKGROUND:** Tobacco is the leading preventable cause of death in the US. Physician advice doubles the likelihood of patients quitting. Many medical schools have incorporated the Stages of Change Model into their curricula with specific application to tobacco cessation.

**METHODS:** Using a quasi-experimental design, medical students' counseling interactions were evaluated with a standardized patient portraying a smoker in either the precontemplation or preparation stage of change. Participants were 147 third year medical students at the University of California, San Francisco. Checklists completed by standardized patients evaluated students' clinical performance. Surveys administered before and after the encounters assessed students' knowledge, attitudes, confidence and prior experience with treating smoking.

**RESULTS:** Most students asked about tobacco use (89%), advised patients of the health benefits of quitting (74%), and assessed the patient's readiness to quit (76%). The students were more likely to prescribe medications and offer referrals to patients in the preparation than in the precontemplation stage of change ( $p < .001$ ); however, many students had difficulty identifying patients ready to quit, and few encouraged patients to set a quit date or arranged follow up to assess progress. Students' tobacco-related knowledge, but not their attitudes, confidence, or prior experience predicted their clinical performance.

**DISCUSSION:** While there was evidence of students tailoring their counseling strategies to the patients' stage of change, they still could do more to assist their patients in quitting. Additional training and integration of cessation counseling into clinical rotations are needed.

**REFLECTIVE CRITIQUE:** A working group among the three study authors allowed for collaborative feedback in designing the project, overseeing its implementation, and interpreting study findings. Informal and formal peer review of the written manuscript provided additional useful critique for communicating the study findings.

**FUNDING:** This work was supported by the National Cancer Institute (#R25 CA96975), the National Institute on Drug Abuse (#K23 DA018691 and #P50 DA09253), the State of California Tobacco-Related Disease Research Program (#13KT-0152), and the Health Resources and Services Administration (#D56HP00042).

**CITATION:** Prochaska, J.J., Teherani, A., & Hauer, K.E. (in press). Medical students' use of the stages of change model in tobacco cessation counseling. *J Gen Intern Med*

## **STUDENT PERFORMANCE PROBLEMS IN MEDICAL SCHOOL CLINICAL SKILLS ASSESSMENTS**

Karen E. Hauer, Arianne Teherani, Kathleen M. Kerr, Patricia S. O'Sullivan, and David M. Irby  
University of California, San Francisco

**PURPOSE:** To characterize problems students demonstrate in comprehensive standardized patient assessments, etiologies of those problems, and their amenability to remediation.

**BACKGROUND:** Although most medical schools administer comprehensive clinical skills assessments to identify students who have not achieved competence, the types of problems uncovered by these exams have not been characterized.

**METHODS:** We conducted semi-structured interviews with 33 individuals identified in a prior survey of curriculum deans as responsible for remediation following their schools' fourth-year comprehensive assessment. Questions addressed their experience with the problems students demonstrate during the exam and strategies for and success with remediation. We used grounded theory to analyze the data, employing the constant comparative approach, conducting analysis and data collection concurrently. We stopped interviewing when interviews were no longer yielding new information about themes.

**RESULTS:** Respondents perceived technical, clinical reasoning and interpersonal skills as the potentially problematic domains. Technique problems were readily correctable through videotape review and focused coaching. Etiologies of performance problems included poor role modeling, inadequate knowledge and lack of insight. The testing environment contributed to some problems because of time pressure, text anxiety, students' perceptions of artificiality, or unclear expectations. Poor performance from inadequate knowledge or poor clinical reasoning ability was difficult to ameliorate. Interpersonal skill deficiencies, which often manifested as detachment from the patient, and professionalism problems attributed to lack of insight, were most refractory to remediation.

**DISCUSSION:** Poor performance in comprehensive assessments often indicates underlying deficiencies in cognitive ability, communication skill and/or professionalism. The challenge of remediating these deficiencies late in medical school calls for earlier identification and intervention. We have submitted these results for publication.

**REFLECTIVE CRITIQUE:** Our research team jointly developed the interview tool, analyzed data, and reviewed results and manuscript drafts through many meetings. We will receive further feedback through peer review.

Acknowledgements: The Josiah Macy, Jr., Foundation.

## **WEB-BASED EDUCATION IN SYSTEMS-BASED PRACTICE: A RANDOMIZED TRIAL**

B. Price Kerfoot MD EdM, Paul R. Conlin MD, Thomas Trivison, PhD, and Graham T. McMahon MD MMSc. Harvard Medical School

### **BACKGROUND**

All accredited US residency programs are expected to offer curricula and evaluate their residents in six general competencies. Medical schools are now adopting similar competency frameworks. We investigated whether a web-based program could effectively teach and assess elements of systems-based practice.

### **METHODS**

We enrolled 276 medical students and 417 residents in the fields of surgery, medicine, obstetrics-gynecology, and emergency medicine in a 9-week randomized controlled cross-over educational trial. Participants were asked to sequentially complete validated web-based modules on patient safety (PS) and the US healthcare system (HS). The primary outcome measure was performance on a 26-item validated online test administered before, between and after the participants completed the modules.

### **RESULTS**

Ninety-two percent (640/693) of enrollees participated in the study; 80% (512/640) of participants completed all three tests. Participants' test scores improved significantly after completion of the first module ( $p < 0.001$ ). Participants retained PS and HS knowledge after 4 weeks. Overall learning from the 9-week web-based program, as measured by the increase in scores (post-test minus pre-test), was 16 percentage points in PS topics (95% CI 14 to 17,  $p < 0.0001$ ) and 22 percentage points (95% CI 20 to 23,  $p < 0.0001$ ) in HS topics. Corresponding effect sizes were 1.00 (95% CI, 0.84 to 1.16) and 1.22 (95% CI, 1.08 to 1.32).

### **CONCLUSIONS**

A web-based educational program on systems-based practice competencies generated significant and durable learning across a broad range of medical students and residents.

## **PLACEMENT OF A FEMORAL VENOUS CATHETER**

Janet Tsui, University of California, San Francisco; Michelle Lin, University of California, San Francisco; Susan Stroud, University of Utah; Adam Collins, University of California, San Francisco; Jeff Tabas, University of California, San Francisco

**PURPOSE:** To create a multimedia website featuring educational videos and self-assessment questions with the aim of improving central line placement technique among residents and physicians.

**BACKGROUND:** The Institute of Medicine recently issued a report that outlined central line placement complications and infections as one of the leading causes of medical errors. Teaching medical students and residents how to perform procedures has traditionally been done on a one-on-one basis and the quality of instruction may vary widely among trainee experiences. We believe that having accurate, standardized multimedia methods of training clinicians to perform procedures may help reduce iatrogenesis.

**METHODS:** Several central line placement procedures on both humans and cadavers were filmed at SFGH and Parnassus. The clips were edited with FinalCut Pro to produce a 7 minute main procedure video, accompanied by 9 supplemental videos of topics including: spiking an IV saline bag, preparing the central line kit, anatomy review, ultrasound guidance, troubleshooting techniques for difficulty in finding the vein, troubleshooting techniques for difficulty in advancing the wire, Seldinger technique, drawing blood, and securing the line. Computer generated animation with Cinema 4D was used to illustrate more challenging concepts such as ultrasound guidance. Using Macromedia Dreamweaver, the videos were arranged in an easy-to-use website replete with self-assessment questions.

**EVALUATION PLAN:** Students will take a self assessment before going through the module and after. Scores will be compared using a paired t-test. Additionally, a questionnaire will be administered to assess the satisfaction of the user.

**DISSEMINATION:** We plan to publish this on a school-wide website and/or submit the videos to educational or clinical journals.

**RELECTIVE CRITIQUE:** Feedback collected from colleagues and users will be taken into consideration on a continual basis to improve the website content and usability.

## **ASSESSMENT OF PRACTICE IMPROVEMENT INTERVENTIONS TO REDUCE PERIOPERATIVE CARDIAC MORBIDITY AND MORTALITY**

Arthur Wallace, M.D., Ph.D.  
University of California

**PURPOSE:** This research will study methods to educate clinicians and assist in the implementation a level 1 standard of care for medical care.

**BACKGROUND:** There are 50,000 myocardial infarctions and 20,000 deaths in the patients who undergo non-cardiac surgery each year in the United States. Perioperative administration of beta blockers reduces the incidence of perioperative cardiac death between 50% and 90%; but is presently not fully utilized. This project will test, optimize, disseminate, and quantify the effectiveness of six educational information-technology based implementation methodologies designed to change physician behavior, increase utilization of perioperative beta blockers, and reduce 30-day mortality.

**METHODS:** Six strategies to educate physicians and change behavior will be tested:

- 1) Educational program (web based and live lectures),
- 2) Standardized protocols,
- 3) Computerized order sets,
- 4) Computerized reminders,
- 5) On-line risk assessment with computerized decision support,
- 6) Audit and feedback of adherence rates.

Time series analysis (before and after implementation of each strategy) of appropriate adherence to the use of beta blocker medications will be calculated from data extracted from computerized medical records into an analytic database. Associations between onset of the educational implementation strategies, prescribing patterns for beta blocker medications, and mortality will be calculated.

**RESULTS:** To date, the educational implementation strategies have been introduced at 60 hospitals by direct contact and 50 by remote contact. Implementation of the program is associated with a 30-35% reduction in 30-day mortality in individual hospitals.

**DISCUSSION:** The assessment of six educational methodologies to implement perioperative beta blocker therapy study will quantify the effectiveness of six educational strategies to change physician behavior and reduce operative mortality.

**REFLECTIVE CRITIQUE:** A survey of all anesthesiologists, cardiologists, and chiefs of surgery in the VA was conducted with regard to the systems based implementation program for perioperative beta blockade and how to optimize the program.

## POSTER PRESENTATIONS

MODEL SFGH: A MULTI-SPECIALTY COLLABORATIVE PROJECT FOR CARE OF THE URBAN UNDERSERVED .....	17
DERMATOLOGY CURRICULUM NEEDS ASSESSMENT: A MULTICENTER SURVEY OF PRIMARY CARE RESIDENTS AND FACULTY .....	18
INTEGRATED TEACHING OF THE PHYSICAL EXAMINATION AND CLINICAL REASONING THROUGH PROBLEM-BASED LEARNING .....	19
RESIDENTS' FEELINGS ABOUT COMPLETING A SERIES OF WRITTEN REFLECTION EXERCISES.....	20
SELF CONTAINED TUTORIALS OF MOVEMENT DISORDERS USING VIDEO EXAMPLES .....	21
DEVELOPMENT OF A TEACHING CURRICULUM FOR PATHOLOGY AND LABORATORY MEDICINE RESIDENTS .....	22
FUNDAMENTALS OF OPHTHALMOLOGY: VISION FOR LIFE, FROM PREMIES TO THE ELDERLY .....	23
A COMPETENCY-BASED STUDENT ASSESSMENT PLAN FOR THE LONGITUDINAL CLERKSHIP PILOT AT PARNASSUS (PISCES).....	24
OR ASSIST: SURGICAL OPERATING ROOM EXPERIENCE AND MENTORSHIP IN THE PRE-CLINICAL YEARS .....	25
REINFORCING BASIC SCIENCE CONCEPTS IN STANDARDIZED PATIENT EXERCISES .....	26
A WEB-BASED CLINICAL RESEARCH CURRICULUM FOR STUDENTS FROM ALL SCHOOLS: I. FINDING A MENTOR AND SELECTING A PROJECT .....	27
PROVIDING INTERNAL MEDICINE RESIDENTS WITH MORE EXPERIENCE IN MEDICAL EDUCATION: THE MEDICAL EDUCATION AREA OF DISTINCTION .....	28
PILOTING A CURRICULUM IN 'PRACTICE MANAGEMENT': TEACHING NEW DOGS OLD TRICKS. ....	29
INCORPORATING FEEDBACK SKILLS WITH SURFACE ANATOMY IN PROLOGUE .....	30
TRANSFORMING 'PROFESSIONALISM' FROM CONCEPT TO PRACTICE ON CLINICAL CLERKSHIPS: DEVELOPING A VIDEO-BASED CURRICULUM: WORK IN PROGRESS.....	31
A LONGITUDINAL SURGICAL SKILLS CURRICULUM IN THE PRE-CLINICAL YEARS .....	32
STRUCTURED EXERCISES IN REFLECTION FOR OBSTETRICS AND GYNECOLOGY RESIDENTS: TOOLS FOR SELF-DIRECTED LEARNING.....	33
STUDENT SATISFACTION WITH PHYSICAL EXAMINATION INSTRUCTION ON ATTENDING-ONLY HOSPITALIST SERVICES VERSUS TRADITIONAL WARD TEAMS.....	34
A "PROFESSIONALISM" COURSE FOR THE CLINICAL CLERKSHIPS: DEVELOPING A STUDENT-CENTERED CURRICULUM BY ASSESSING THIRD-YEAR MEDICAL STUDENTS' PERCEPTIONS OF THEIR PROFESSIONAL CLIMATE .....	35

FACTORS ASSOCIATED WITH AND THE IMPACTS OF RESIDENT TEACHING TIME IN THE ERA OF DUTY HOUR RESTRICTION .....	36
TEACHING PHYSICAL EXAMINATION AND MEDICAL SPANISH SIMULTANEOUSLY .....	37
ENCOURAGING RURAL AND UNDERSERVED INTEREST IN MEDICAL STUDENTS AT A REGIONAL CAMPUS: IMPACT OF MODEL FRESNO .....	38
MULTIDISCIPLINARY SERVICE-LEARNING: A MEDICAL-LEGAL COLLABORATION FOR THE URBAN UNDERSERVED.....	39
THE USE AND EFFECTIVENESS OF ROTATION-SPECIFIC OBJECTIVES AMONG ACADEMIC FOOT AND ANKLE SURGEONS .....	40
A SURVEY OF TRANSITION COURSES TO PREPARE MEDICAL STUDENTS FOR CLERKSHIPS.....	41
A TRAINING MANUAL TO DEVELOP CASE-BASED ONLINE LEARNING MODULES .....	42
DEVELOPMENT AND USE OF A CURRICULUM MAP FOR DOCUMENTING, NAVIGATING, AND MODERNIZING TOBACCO-RELATED TEACHING IN THE UCSF SCHOOL OF MEDICINE .....	43
WHAT ARE THE LEARNING STYLES OF PRE-MEDICAL STUDENTS IN LOWER AND UPPER DIVISION SCIENCE COURSEWORK?.....	44
DEVELOPING A DIDACTIC CURRICULUM FOR CHRONIC CARE .....	45
FELLOWS' COLLEGE: A MODEL 3 YEAR PROGRAM TO "JUMP START" ACADEMIC CAREERS OF ACGME SUBSPECIALTY FELLOWS USING EARLY FACULTY PROFESSIONAL DEVELOPMENT TOOLS .....	46
STUDENTS'S PERCEPTIONS OF A COMMUNITY HEALTH CURRICULUM IN A CORE CLERKSHIP.....	47
A CARDIAC PHYSICAL EXAMINATION CURRICULUM FOR ALL FOUR YEARS OF MEDICAL SCHOOL- INNOVATIONS WITH THE FIRST YEAR STUDENTS .....	48
ONLINE TUTORIAL TO TEACH EVIDENCE-BASED MEDICAL LITERATURE SEARCHING.....	49
A STRUCTURED MOCK CODE CURRICULUM FOR PEDIATRIC RESIDENTS.....	50
OVERCOME BARRIERS IN DISCUSSING ADVANCED DIRECTIVES AND CODE STATUS WITH PATIENTS.....	51
'HAND-OFF' REFORMS AT THE UCSF-FRESNO INTERNAL MEDICINE RESIDENCY PROGRAM. ....	52
TEACHING RESIDENTS TO TEACH: THE IMPACT OF A LONGITUDINAL MULTIDISCIPLINARY FELLOWSHIP TO IMPROVE TEACHING SKILLS.....	53
PROGRAM IN MEDICAL EDUCATION FOR THE URBAN UNDERSERVED (PRIME-US).....	54
FACTORS ASSOCIATED WITH A CAREER CHOICE IN ACADEMIC OBSTETRICS AND GYNECOLOGY .....	55

## **MODEL SFGH: A MULTI-SPECIALTY COLLABORATIVE PROJECT FOR CARE OF THE URBAN UNDERSERVED**

Leila Alpers, Elizabeth Wilson, Margo Vener  
School of Medicine, University of California, San Francisco

### **PURPOSE:**

Model SFGH is a longitudinal clerkship experience for students with interests in working with urban underserved patients. The program goals are to improve interdisciplinary learning, increase mentorship, and provide students with more in-depth experience in the care of this population.

### **BACKGROUND:**

Model SFGH, initiated as a pilot in 2005-2006, is a collaborative project of the Departments of Medicine, Pediatrics, and Family and Community Medicine. The elements of the pilot are: 1) consecutive completion of the three aforementioned core clerkships within the SFGH/Community Health Network system, 2) Longitudinal Clinical Experiences (LCE) within the system one half day per week, 3) participation in student-organized seminars, and 4) student-faculty mentorship, all with a focus on the urban underserved. Informal feedback from students in the 2005-2006 pilot indicated that increased mentorship and in-depth longitudinal activities would improve the experience.

### **METHODS:**

Fifteen students participated in the first half of the academic year and ten students are currently participating in the second half. More robust faculty-student mentoring relationships were fostered via faculty outreach and education. We enhanced longitudinal community health experience by helping students identify LCE community projects, collaborative student projects, and group activities.

### **EVALUATION PLAN:**

Quantitative and qualitative data from the following sources are currently pending: self-assessment, student focus groups, attitude surveys (specifically attitudes and beliefs about the underserved), mini-CPX, CPX, and satisfaction measures. The non-pilot students will be used as a control group for the final three measures. All but the self-assessment and attitude surveys are outcome measures.

### **DISSEMINATION:**

We plan on submitting the results of our pilot program for publication.

### **REFLECTIVE CRITIQUE:**

We made changes to the program based on student input. We monitor closely what students and faculty say to ensure that the program is being conducted as we planned. We solicit feedback from participating departments at SFGH about how to increase interdisciplinary learning.

## **DERMATOLOGY CURRICULUM NEEDS ASSESSMENT: A MULTICENTER SURVEY OF PRIMARY CARE RESIDENTS AND FACULTY**

Cynthia Chen  
Lee Zane  
Timothy Berger  
University of California, San Francisco, CA

**PURPOSE:** A multicenter needs assessment of dermatologic education in U.S. medical schools.

**BACKGROUND:** Previous studies report that 70% of medical schools required less than 20 hours of dermatologic teaching, and over 7% of schools required none.<sup>1,2</sup> No studies have determined whether this is adequate to prepare their graduates for internship.

**METHODS:** Faculty and residents in Internal Medicine, Family Medicine, Emergency Medicine, and Pediatrics at seven institutions were surveyed. Residents rated their preparedness in managing skin disease and satisfaction with their medical school curricula across content areas, including three non-dermatology controls: asthma, diabetes, and conjunctivitis. Faculty rated the importance of the same content areas and preparedness of incoming interns.

**RESULTS:** 170 faculty and 365 residents participated. Only 9.6% of faculty agreed/strongly agreed that their trainees begin internship prepared to manage common skin disorders, and 37.2% of residents agreed/strongly agreed that they felt prepared to manage skin disease as interns. Content areas that >50% of faculty considered very important for training in their field included skin infections, drug eruptions, melanoma/nevi, skin infestations, and vasculitis/purpura. >40% of residents rated their medical school training inadequate in vasculitis/purpura, drug eruptions, alopecia, and HIV dermatology.

**DISCUSSION:** Residents feel that they do not begin internship prepared to manage common skin disorders, and faculty agree. Faculty consider drug eruptions and vasculitis/purpura very important yet residents report that they are inadequately taught in medical school. Data has been presented at 2006 and 2007 American Academy of Dermatology meetings and is being prepared for publication in a peer-reviewed journal and oral presentation for the Association of Professors of Dermatology.

**REFLECTIVE CRITIQUE:** Study methodology has been revised to its current form based on preliminary data collection in 2005, review by research specialists in the UCSF Office of Medical Education, and discussion at an ESCape conference.

1. Ramsay DL, Mayer F. National survey of undergraduate dermatologic medical education. *Arch Dermatol* 1985;121:1529-30.
2. Glickman FS. Dermatologic education for primary care in the United States. *Int J Dermatol* 1989;28:327-31.

# **INTEGRATED TEACHING OF THE PHYSICAL EXAMINATION AND CLINICAL REASONING THROUGH PROBLEM-BASED LEARNING**

H. Carrie Chen, Teri Marsh, and Jessica Muller  
University of California San Francisco School of Medicine

## **PURPOSE**

The purpose of the project was to improve physical examination (PE) teaching by:

- Allowing practice of PE in the context of a clinical case
- Requiring the application of clinical reasoning to PE

## **BACKGROUND**

Medical students often have difficulty applying their physical examination (PE) skills to problem-solving in the clinical context; they struggle with knowing WHEN to do WHAT parts of the PE in a clinical encounter. To address this problem from the outset of PE education, we developed an innovative approach to PE teaching for first-year students. We merged PE practice with standardized patients (SPs) and problem-based learning (PBL) to create novel PE/PBL exercises that encourage the integrated development of clinical reasoning and PE skills.

## **METHODS**

We converted two of four PBL cases into PE/PBL exercises.

Session 1: Students interview and examine SP with chief complaint.

Session 2: Students discuss findings, case advances based on findings, group develops learning issues.

Session 3: Students discuss learning issues, case advances, and SP returns. Student discusses with SP his/her diagnosis and/or management plan.

## **EVALUATION PLAN**

Students and faculty facilitators complete evaluation forms after each PBL or PE/PBL case to assess its helpfulness for skill development and overall quality, using a 5-point Likert scale.

## **RESULTS**

141 students and 48 faculty facilitators participated. Evaluation scores (including comparisons of the 2 PE/PBL cases with the 2 regular PBL cases) and representative comments will be compiled and presented.

## **DISSEMINATION**

We will present our results at the 2007 Western Group on Educational Affairs meeting and plan submission of the PE/PBL cases to MedEdPORTAL.

## **REFLECTIVE CRITIQUE**

We will use our results to make continuing changes to the PE curriculum and the PE/PBL exercises. We also plan to develop tools to assess the impact of these exercises on students' clinical reasoning skills.

## **RESIDENTS' FEELINGS ABOUT COMPLETING A SERIES OF WRITTEN REFLECTION EXERCISES**

Audrey Foster-Barber, Eva H. Chittenden, Lee A. Learman, Pat S. O'Sullivan  
University of California, San Francisco School of Medicine

**PURPOSE:** We conducted focus groups with residents to understand their feelings about completing written reflection exercises. This qualitative study generated hypotheses to inform future studies.

**BACKGROUND:** Educational theorists point to the essential nature of reflection as part of learning. Increasingly, we ask learners to reflect, but often with little guidance or role-modeling. We also fail to explore the nature and quality of the experience.

**METHODS:** Residents in OB/GYN completed six structured written reflections during the 2005-2006 academic year. After obtaining CHR approval, we conducted three focus groups in Fall 2006 to assess their perspectives. In a convenience sample, 15 of 24 (62.5%) residents participated in focus groups by PGY level. One researcher conducted the focus group and another took notes. Groups lasted 45 minutes. We analyzed the transcripts by conducting an open coding process among three researchers and formally coding the data using qualitative software.

**RESULTS:** Review of the transcripts resulted in five themes. First, the *understanding of the concept of reflection* varied from superficial to refined despite detailed instructions. Second, the residents *preferred reflection in the moment (in-action) to reflection after an event (on-action)*. Third, some residents *questioned the value of written reflections* and reported that talking about their experiences was sufficient. Fourth, *responding to specific assignments felt constraining, artificial and burdensome*. Finally, *feedback on the reflections* was critical.

**DISCUSSION:** Residents valued reflection. While many questioned the need to write reflections, others appreciated the benefits. Optimal design of reflection exercises takes careful crafting. Honing residents' understanding of reflection, giving more freedom in assignment timing and content area, and providing timely feedback would enhance the acceptability and quality of these important exercises.

**REFLECTIVE CRITIQUE:** Changes have already been incorporated to these written exercises to improve the educational experience for residents. We presented at ESCape to clarify our communication of findings.

## **SELF CONTAINED TUTORIALS OF MOVEMENT DISORDERS USING VIDEO EXAMPLES**

Chad Christine  
Department of Neurology, UCSF

**PURPOSE:** To develop a self contained basic movement disorder modules with video examples for medical students in the second and third years of training to enhance recognition of these disorders.

**BACKGROUND:** Movement disorders are those clinical conditions that are characterized by involuntary abnormal movements of the body. Teaching medical students the fundamentals of movement disorders is often hampered by the challenge of describing clinical findings which are more efficiently learned by seeing patients live or using video segments.

**METHODS:** A website based tutorial on 6 common movement disorders was developed using brief text descriptions and short video examples of patients. Basic content for each movement disorder type was developed using neurology textbooks. The structure of the web pages was adapted from the WEB-CT at UCSF. In August 2006, 5 modules were posted on-line covering these topics: tremor, parkinsonism, ataxia, chorea, myoclonus and tics. These modules were reviewed by medical students and faculty members who have recommended changes in the text and video quality. A second version of these modules was posted in January 2007.

**EVALUATION PLAN:** The website is now mentioned in the student syllabus and will be demonstrated to students in their first lecture on Parkinson's disease. I plan a simple survey to be sent to a sample of students via email during BMB course when these videos are used. A similar survey is planned for teachers and students during the clinical rotation.

**DISSEMINATION:** Once the results from students and teacher's surveys are obtained, I intend to publish this work.

**REFLECTIVE CRITIQUE:** Web-based teaching modules represent a curriculum innovation which may improve teaching for students and residents. A simple survey of the usefulness of this website will aid in improving the content of these modules as well as evaluating them as teaching aids.

## **DEVELOPMENT OF A TEACHING CURRICULUM FOR PATHOLOGY AND LABORATORY MEDICINE RESIDENTS**

Amanda Doherty and Joan Etzell, University of California, San Francisco

**PURPOSE:** To develop a curriculum for Pathology and Laboratory Medicine residents on principles of effective teaching.

**BACKGROUND:** Effective medical education depends on residents teaching less experienced peers and medical students. Pathology and Laboratory Medicine residents encounter situations that differ from other medical fields, resulting in GME teaching sessions being viewed by our trainees as suboptimal. We developed a curriculum adapting these techniques to the context of Pathology and Laboratory Medicine. A similar approach may also improve instruction in other specialties.

**METHODS:** We developed and implemented a 2.5-hour curriculum which included instruction on: 1) the One Minute Preceptor applied to teaching at the microscope, demonstrating the technique with case scenarios, 2) giving effective feedback, employing case scenarios specific to Pathology and Laboratory Medicine, and 3) effective teaching methods when supervising junior trainees in the surgical pathology gross room, facilitated by a current senior trainee. Seven residents participated.

**EVALUATION PLAN:** Attendees completed an evaluation form rating the session as poor, fair, good, very good, or excellent. All seven attendees submitted evaluations, with following results: 5 ranked the session as excellent, 1 as very good, and 1 evaluation contained comments only. In addition, the authors observed significant participation by all attendees and ranked the content of the discussion as excellent.

**DISSEMINATION:** The authors plan to post curriculum materials on the department web site. In addition, the project may be published as appropriate after search of the literature for similar curricula.

**REFLECTIVE CRITIQUE:** Based on attendees' evaluations and observations during the session, we plan to: 1) continue case scenarios, 2) offer sessions more than once a year, 3) divide the material into more than one session, 4) develop sessions specific to either Pathology or Laboratory Medicine, and 5) continue to recruit senior trainees who are outstanding educators to facilitate sessions.

## **FUNDAMENTALS OF OPHTHALMOLOGY: VISION FOR LIFE, FROM PREMIES TO THE ELDERLY**

Douglas Fredrick  
Joan O'Brien  
Justin Wilkinson  
Rachel Sobel  
University of California, San Francisco

**PURPOSE:** Our proposal is to develop a fourth year, two week clinical elective for students going into specialties other than ophthalmology who want to learn how to recognize, treat, and refer preventable causes of blindness.

**BACKGROUND:** The fundamentals of ophthalmology are an important skill set for every physician. Most causes of visual impairment are readily diagnosed and approximately half of blindness and visual impairment is treatable or preventable. In a survey of medical school curriculum directors, only 37% had a required ophthalmology rotation in 2000, and that number dipped to 17% only three years later. What's more, there is hardly infrastructure within medical education to rectify deficiencies in the way our specialty educates medical students.

**METHODS:** We will target 4<sup>th</sup> year medical students going into specialties other than ophthalmology, interested in learning primary care ophthalmology. We expect to pilot the program to between 8-20 students.

**EVALUATION PLAN:** To ensure rotation is delivered as intended, we will ask students to keep a log of clinics and OR sessions they attended and turn this in at the wrap up. Student will have resident/faculty sign off on direct ophthalmoscopy skill and other ophthalmic diagnostic skills.

**RESULTS:** The course has been well subscribed and favorably evaluated.

**DISSEMINATION:** The results of the needs assessment as well as the effectiveness of the course as a learning experience will be submitted for publication in the journal *Ophthalmology*.

**DISCUSSION:** Utilizing a carefully designed objectives based curriculum, it is possible to instruct medical students to obtain skills and knowledge that will be used by physicians pursuing careers in primary care.

**REFLECTIVE CRITIQUE:** In addition to written course evaluations completed by each student at the end of the elective, each student is interviewed personally by Dr. Fredrick on the last day of the elective.

## A COMPETENCY-BASED STUDENT ASSESSMENT PLAN FOR THE LONGITUDINAL CLERKSHIP PILOT AT PARNASSUS (PISCES)

Karen E. Hauer, Lindsay Mazotti, Lowell Tong  
University of California, San Francisco

**PURPOSE:** To develop a comprehensive assessment plan for Parnassus longitudinal clerkship pilot (PISCES) students, based on competency domains defined by the Committee on Student Assessment.

**BACKGROUND:** PISCES students will follow patients longitudinally across disciplines and develop relationships with preceptors in one medical system. This radical redesign of the core clerkships necessitates innovative assessment methods to capture the range of student performance. PISCES offers the opportunity to address deficiencies in the current clerkship evaluation system, including subjectivity and reliance on preceptor evaluations and written examinations.

**METHODS:** We will implement the following assessment tools across competency domains, starting in 2007-08.

	Knowledge	Patient care/ communication with patients- families	Professionalism/ communication with team	Practice-based learning and improvement	Systems based practice
NBME Comprehensive examination	X				
Brief structured clinical observations		X	X		
RIME (Reporter/Interpreter/Manager/ Educator) assessment vocabulary, evaluation sessions	X	X	X		
Peer assessment			X	X	
Chart review	X	X	X		
Longitudinal journal				X	X
Quality improvement project			X	X	X

**EVALUATION PLAN:** We will evaluate overall student assessment using end-of-clerkship evaluations regarding satisfaction with PISCES, feedback and evaluation. We will conduct focus groups with students and advisors regarding satisfaction with assessment. We will evaluate the RIME system using pre- and post-surveys of preceptors, and post-surveys of PISCES and non-PISCES students regarding satisfaction with clerkship evaluation.

**DISSEMINATION:** The PISCES evaluation plan can serve as a model for other UCSF clerkships to adopt the competencies and different assessment tools. Authors intend to present workshops on RIME and other PISCES assessment strategies at national medical education meetings. We plan to submit abstracts and manuscripts on this assessment strategy.

**REFLECTIVE CRITIQUE:** Dr. Tong is working with the NBME on the comprehensive clerkship examination content and standard-setting. We are recruiting students to incorporate their perspective during development of peer assessment tools and the longitudinal journal.

## **OR ASSIST: SURGICAL OPERATING ROOM EXPERIENCE AND MENTORSHIP IN THE PRE-CLINICAL YEARS**

Holtzman, Daniel; Cloyd, Jordan; Sammann, Amanda; Tendick, Frank; Ascher, Nancy, School of Medicine and Department of Surgery, University of California, San Francisco, California.

### **PURPOSE**

Provide early exposure to the OR and establish mentoring relationships between first-year medical students and surgical faculty.

### **BACKGROUND**

Research shows that pre-clinical exposure to surgical skills 1) reduces student anxiety and improves confidence during surgery clerkships; 2) improves surgical knowledge and skills; and 3) increases students' interest in surgery as a career. Previously, the *Surgical Skills* elective taught and evaluated students on the basics of sterile technique, knot-tying, suturing, and instrumentation.

### **METHODS**

The OR Assist elective in Spring 2007 will pair 30 students with 20 surgical mentors to allow the students to scrub into the OR and use the basic surgical skills they have already learned. Surgeons from general, transplant, orthopaedic, plastic, and other surgical specialties will each serve as mentor for 1-2 students. Students will coordinate with their surgical mentor to schedule at least three operations during a two month period to scrub in and assist. Surgeons will be encouraged to provide the students with a more "hands-on" OR experience than traditional "shadowing." This will include implementation of the students' skills in suturing, knot-tying, and other instrumentation. Students will also be provided with surgical skills review sessions throughout the elective to enable students to refresh and develop their skills over time.

### **EVALUATION PLAN**

Before the elective, students will be surveyed to evaluate confidence levels and interest in surgery and tested in suturing and knot-tying. After each operation, students will again be surveyed, as will the mentoring surgeon and scrub nurse, to evaluate the students' progress. At the end of the elective, students will be tested to measure improvement in suturing and knot-tying.

### **DISSEMINATION**

We will publish our results and anticipate that other schools will initiate similar pre-clinical OR experiences.

### **REFLECTION CRITIQUE**

Participant, surgeon, and nurse surveys will help motivate potential curriculum improvement.

## **REINFORCING BASIC SCIENCE CONCEPTS IN STANDARDIZED PATIENT EXERCISES**

Katherine M. Hyland, H. Carrie Chen, Marieke Kruidering-Hall, Helena Hart  
University of California San Francisco, School of Medicine

**PURPOSE:** To promote the application of basic science knowledge to patient care in the context of history taking, physical exam and clinical reasoning, we introduced a novel exercise for 2<sup>nd</sup> year medical students that integrates case-specific science questions with a standardized patient (SP) encounter.

**BACKGROUND:** Medical schools seek to promote student application of basic science knowledge during patient encounters. Educational theory suggests that context-dependent learning results in better retention and application of skills and knowledge.

**METHODS:** In 2006, we piloted an SP/knowledge exercise for all 2<sup>nd</sup> year students during Cancer: Bench to Bedside. Students individually interviewed and examined SPs with chief complaints of abdominal pain and histories significant for previously treated colon or breast cancer. Students then answered epidemiology, genetics, molecular biology, pathophysiology, or pharmacology questions related to their SPs' specific symptoms, findings, and possible diagnoses. Students evaluated the exercise for its ability to reinforce science knowledge and clinical skills, and overall usefulness for learning, using a 5-point Likert scale from strongly disagree (1) to strongly agree (5).

**EVALUATION/RESULTS:** 139 students participated. Usefulness of exercise for development of clinical reasoning skills was rated 3.6 (SD 1.06), and the overall usefulness of the session for their learning was rated 3.7 (SD 0.93). Students commented that the timing of this session should be changed (41%), and that prior information should be provided to aide preparation (22%). Many students felt this exercise should be kept, with modifications. A majority of students recommend creating similar sessions for other blocks (3.9, SD 1.0).

**DISSEMINATION:** Presented at WGEA. ECCC and FPC meetings will be used for internal dissemination.

**REFLECTIVE CRITIQUE:** We will strive to incorporate the student recommendations. The questions in the written exercise will be modified and better integrated with the clinical exam to more directly promote clinical reasoning, as suggested by faculty and ECSC.

## **A WEB-BASED CLINICAL RESEARCH CURRICULUM FOR STUDENTS FROM ALL SCHOOLS: I. FINDING A MENTOR AND SELECTING A PROJECT**

Rebecca Jackson, MD, School of Medicine  
Elizabeth Boyd, PhD, School of Pharmacy  
June Chan, PhD, School of Medicine  
Susan Hyde, DDS, MPH, PhD, School of Dentistry  
Roberta Oka, RN, ANP, DNSc, School of Nursing  
Joel Palefsky, MD, School of Medicine

**PURPOSE:** To develop a web-based clinical research curriculum which can be used by students from all of UCSF's Professional Schools prior to participating in clinical research.

**BACKGROUND:** Many students from each of UCSF's professional schools participate in mandatory or elective clinical research. Grants such as CTSI (Clinical and Translational Sciences Institute) have been tasked with improving student training in clinical research.

**METHODS:** A brief needs assessment was conducted by interviewing a convenience sample of several students and experienced mentors from each school.

A review was made of clinical research curricula in each school. UCSF websites were searched to determine availability of research information and mentor databases. Based on this assessment, five modules are being developed; this describes the first: "Finding a Mentor and Selecting a Project". The Web-CT module will include an interactive section to help the student define his/her goals for the project, a list of websites and search strategies for finding a mentor and project, a video based tool for preparing for the initial meeting with the mentor, and tips on determining if the mentor is right for the student.

**EVALUTION PLAN:** A pre/post test for students will be a mandatory element in the module. A sample of students will also be asked to complete a satisfaction survey. Mentors who work with students will be interviewed to determine whether the level of student preparation has improved.

**DISSEMINATION:** Attempts will be made to publish and to disseminate at appropriate clinical research, education or epidemiology meetings. We will also make the curriculum available publicly by linking to other similar website and to the MedED Portal.

**REFLECTIVE CRITICISM:** Students reported difficulties finding a project and mentor while mentors reported students were unprepared for their initial meetings with them. We will repeat a survey of mentors and students to reassess these attitudes in those who have completed the module.

## **PROVIDING INTERNAL MEDICINE RESIDENTS WITH MORE EXPERIENCE IN MEDICAL EDUCATION: THE MEDICAL EDUCATION AREA OF DISTINCTION**

Katherine A. Julian, MD, University of California, San Francisco

**PURPOSE:** To create an innovative curriculum in Medical Education in which residents with an interest in teaching and medical education scholarship can be effectively mentored.

**BACKGROUND:** Productivity in research and scholarship is associated with effective mentorship. Despite this, only half of all residents develop successful mentoring relationships. A Medical Education Area of Distinction (AOD) would allow residents with an education interest to be effectively mentored and better prepared to enter academic education positions.

**METHODS:** Interested PGY1 and PGY2 residents were solicited to join the AOD in March 2006. Three internal medicine residents chose to join the AOD in July 2006. Participants meet one half-day during out-patient months (6 months/year). Residents receive didactic seminars on teaching skills, educational scholarship/dissemination, curricular development and evaluation, and career development. All participants take part in the UCSF Resident Teaching Fellowship and the Objective Structured Teaching Evaluation. Participants are required to do some teaching (ex: precept medical students, small-group facilitation) as well as complete a scholarly project.

**EVALUATION PLAN:** Participants evaluate all seminars and will complete an end-of-year evaluation. Additionally, the pre-post teaching evaluations of all participants will be compared with control residents. Other outcomes that will be followed include rate of project completion, degree of project dissemination, and career outcomes. Upon graduation, participants will be surveyed as to the impact of the AOD on their career choice.

**DISSEMINATION:** Plans are underway to offer this AOD to residents in other disciplines in the 2007-2008 academic year.

**REFLECTIVE TECHNIQUE:** During curricular planning, I gathered input from 5 faculty leaders in medical education and/or medical education research. These meetings generated a comprehensive list of didactic topics. I also presented this curriculum to ESCAPE in order to discuss evaluation strategies. As a result of this, I plan to look at teaching evaluations and project outcomes.

## **PILOTING A CURRICULUM IN ‘PRACTICE MANAGEMENT’: TEACHING NEW DOGS OLD TRICKS.**

A. Kinderman, K. Julian.

**PURPOSE:** 1) To enable residents to function effectively as members of a multi-disciplinary ambulatory team, 2) To instruct residents in organizing patient data, accessing system resources, and communicating effectively with patients between visits, and 3) To introduce essential time management skills, including agenda setting and efficient charting.

**BACKGROUND:** Despite an increased proportion of Internal Medicine residency training devoted to ambulatory medicine, many graduating residents report feeling inadequately prepared to practice primary care. One potential explanation is that ambulatory education has traditionally focused on the diagnosis and management of disease, rather than the core practice management skills needed to care for a panel of patients.

**METHODS:** Forty-eight second and third year Internal Medicine residents at UCSF were surveyed regarding their experiences with ambulatory education, and their satisfaction with professional support and personal performance in clinic. We developed a series of nine seminars to address deficiencies identified by residents. These seminars concentrate on time management, tracking patient data, working with clinic team members, controlled substance prescription, specialty referrals, and efficiently accessing social and psychiatric services. Experienced clinician-educators present these topics to interns in a small group, interactive setting.

**EVALUATION PLAN:** We plan to survey second year residents again in one year, to measure their satisfaction and self-assessed effectiveness in managing an ambulatory patient panel, as compared to their predecessors who did not receive this educational intervention.

**DISSEMINATION:** Session outlines are distributed to educators at two clinic sites, and will be available for use in future years. We have posted one of the session outlines on the clinic’s website, and hope to make several of the other session outlines available on the clinic’s website.

**REFLECTIVE CRITIQUE:** Session outlines are provided to educators, who are then able to provide constructive feedback. These critiques are used to refine the curriculum on an ongoing basis.

## **INCORPORATING FEEDBACK SKILLS WITH SURFACE ANATOMY IN PROLOGUE**

Marieke Kruidering-Hall, Kimberly S. Topp, Calvin L. Chou, Katherine M. Hyland and Patricia O'Sullivan. School of Medicine, University of California, San Francisco.

**PURPOSE:** Integration of feedback skills in the context of basic science teaching using role-played clinical encounters. Here we report on the effectiveness of these exercises.

**BACKGROUND:** The ECC emphasizes medical knowledge, while FPC emphasizes clinical skills. Educational theory suggests that context-dependent learning results in better retention and application of skills and knowledge. To teach and assess competencies besides knowledge in the ECC, we integrated feedback skills with surface anatomy.

**METHODS:** We added two new surface anatomy exercises emphasizing feedback skills, and changed an existing practicum to an integrated pass-fail exam. Students rated their feedback skills (5 items; strongly disagree (1) to strongly agree (5)) using a retrospective pre/post survey. Students gave feedback to a lecturer pre/post Prologue and rated 10 items about the new exercises. We calculated descriptive statistics, analyzed pre-post changes in self-rated skills with a dependent samples t-test and correlated skills with perceptions of the exercise.

**EVALUATION:** Students reported improved feedback skills (4.07 (sd=0.62) to 4.52 (sd=0.43),  $p < .001$ ). On average they provided 2.1 (sd=1.4) comment qualifiers pre and 2.6 (sd=1.5) post course. Two-thirds recommend these exercises for giving feedback. Nearly half (47%) agreed or strongly agreed the exercises improve feedback, compared to 80.1% for FPC. The correlation between improvement in self-rating skills and recommendation for continuation was  $r=0.20$ .

**DISSEMINATION:** Presented at WGEA; abstract submitted to AAMC. ECC meetings will be used for internal dissemination.

**REFLECTIVE CRITIQUE:** Critique from WGEA and ESCAPE informed this abstract. Student feedback: "increase case time and complexity, release information stepwise", will be incorporated.

**SELF-REFLECTION:** The results indicate improvement of skills learned in FPC/Prologue. To determine benefit of innovations specifically, the survey should read: "I recommend ...because they help me apply feedback skills" rather than "learn feedback skills".

**CONCLUSION:** Integrating feedback skills with anatomy is effective; students had favorable perceptions and applied what they learned.

# **TRANSFORMING ‘PROFESSIONALISM’ FROM CONCEPT TO PRACTICE ON CLINICAL CLERKSHIPS: DEVELOPING A VIDEO-BASED CURRICULUM: WORK IN PROGRESS**

Cindy Lai<sup>1</sup>, Laura Hill-Sakurai<sup>2</sup>,<sup>1</sup> Department of Medicine, <sup>2</sup> Department of Family and Community Medicine.

## **PURPOSE**

While preclinical medical students are exposed to the concept of professionalism, “professionalism” takes on new meaning when they enter the clinical setting and are challenged by communication issues among team members and patients.

## **BACKGROUND**

In their evaluations of existing curricula, third-year medical students have stated that they feel helpless to address professional challenges and that they want to develop practical skills in this area.

## **OBJECTIVES OF PROGRAM**

1) To develop a student-centered, practical curriculum using video and panels for Intersessions, during which students can reflect and develop solutions to common communication barriers. 2) To raise students’ awareness and skill level at handling certain professionally challenging situations.

## **METHODS**

All third-year medical students at this university attend a course called Intersessions, which occurs in one-week intervals and focuses on important topics such as professional development. In the past two years, students were required to write confidential, one page “critical incident reports” describing memorable experiences of both exemplary and unprofessional behavior they had witnessed during their rotations. We reviewed 183 reports and generated themes of exemplary and unprofessional behaviors witnessed by clerkship students using an iterative consensus building process (see accompanying Abstract). We then selected situations that had potential for miscommunication: 1) transitions of care (sign-out), 2) incorrect assumptions about patients, and 3) criticism of students in inappropriate settings. The videos will include segments of potential solutions and commentary from different team members. Videos will be available by weblink or DVD, and will be integrated into Intersessions.

## **EVALUATION**

Students will evaluate the sessions in which the videos are shown. During the video development phase, we will get feedback from students and faculty.

## **DISSEMINATION**

The plan is to make the video available on a website or DVD. This curriculum is easily transportable for use in other medical schools’ third-year curricula.

## **REFLECTIVE CRITIQUE**

We have developed the cases and scripts based on feedback from students and faculty.

## **A LONGITUDINAL SURGICAL SKILLS CURRICULUM IN THE PRE-CLINICAL YEARS**

Justin Tan, Jasmine Lai, Jordan Cloyd, Daniel Holtzman, Amanda Sammann, Derek Ward, Harras Zaid, Frank Tendick, Nancy Ascher  
*School of Medicine and Department of Surgery, University of California, San Francisco, California*

### **PURPOSE**

To implement a longitudinal curriculum in the pre-clinical years to teach basic surgical skills and provide early exposure to the OR.

### **BACKGROUND**

The 2004 American Surgical Association Report on Surgical Education emphasized the need for students to develop proficiency in surgical skills prior to the clinical years. Research shows that pre-clinical exposure to surgical skills: 1) reduces student anxiety and improves confidence during surgery clerkships, and 2) stimulates student interest in a surgical career.

### **METHODS**

The curriculum implemented at UCSF over the past 2 years includes:

- a suturing module during Prologue Anatomy Lab (30 minutes, n=141);
- a *Surgical Skills Elective* with surgeons teaching students basic knot-tying, suturing, instrument handling, and scrubbing/gowning (four 2-hour sessions, n=90);
- a web-based curriculum with photographs and videos of suturing and knot-tying available to all students.

Practical application of skills in the OR includes three opportunities:

- *OR Assist Elective*, pairs students with UCSF/SFGH surgical mentors to assist in the OR (~10 hours, n=30);
- *Operation Access*, students scrub-in and assist Bay Area Kaiser surgeons (~5 hours, n=12);
- *Organ Recovery Run*, students assist the UCSF transplant team to procure donor organs (~6 hours, n=85).

### **EVALUATION PLAN**

Surveys were distributed in the first year of the Surgical Skills Elective. After the elective, students demonstrated significantly greater confidence in skills and some reduced concerns about surgery. Assessments are being conducted using motion tracking to quantify longitudinal improvement in surgical skills. Additional surveys will identify changes in confidence and concerns.

### **DISSEMINATION**

Results from the 2006 skills elective are being published in *Journal of Surgical Research*. We will continue to publish our findings so that other schools may implement similar activities.

### **REFLECTION CRITIQUE**

Prospective and retrospective surveys in each offering motivate curriculum improvement. Feedback from the 2006 skills elective led to better standardization of teaching.

## **STRUCTURED EXERCISES IN REFLECTION FOR OBSTETRICS AND GYNECOLOGY RESIDENTS: TOOLS FOR SELF-DIRECTED LEARNING**

Lee Learman, MD, PhD, Meg Autry, MD, Laura Pliska, CD, Pat O'Sullivan, PhD  
University of California, San Francisco School of Medicine

**PURPOSE:** To evaluate the feasibility of implementing structured exercises in reflection in an Ob/Gyn residency program.

**BACKGROUND:** Reflection is a necessary habit for self-directed learning. In December 2005 we changed the emphasis of our semi-annual performance review meetings to include reflection exercises to help residents establish a habit of self-directed learning.

**METHODS:** This was a cross-sectional study of 32 residents in a single Ob/Gyn gynecology residency program. Before each semi-annual review meeting, the residents received three guidelines asking them to choose one case that "taught them the most" according to specified criteria and to reflect on that case. The guidelines contained a description about what it means to reflect and a 6-level scoring rubric (1: no mention of lessons learned, 6: justification of strategies used to improve, evidence for effectiveness). Faculty discussed the reflections individually with the residents and provided formative feedback. The de-identified reflections were later scored by two investigators trained to use the scoring rubric reliably.

**EVALUATION PLAN:** We received a total of 183 (95% of the possible 192) reflections from all 32 residents. On average residents demonstrated superficial reflective ability (mean 2.47, s.d. 0.57). However, most residents (81%) demonstrated evidence of deeper reflection in at least one skill area. We are currently exploring how the ability to reflect changes over time and its relationship to other competencies. We will also evaluate the feasibility of attaching evidence of learning to the reflections.

**DISSEMINATION:** In 2007 we presented this work to a national audience of Ob/Gyn educators (CREOG/APGO) and data comparing reflective ability across PGY and skill area to a national audience of professional educators (AERA).

**REFLECTIVE CRITIQUE:** Feedback from preliminary presentations of this work in 2006 (WGEA and AAMC) were supportive of our efforts and its inherent challenges. Feedback from resident focus groups provided constructive suggestions for improving the reflections, nearly all of which were implemented in the following academic year.

## **STUDENT SATISFACTION WITH PHYSICAL EXAMINATION INSTRUCTION ON ATTENDING-ONLY HOSPITALIST SERVICES VERSUS TRADITIONAL WARD TEAMS**

Christina A. Lee, Cindy J. Lai, Adrienne L. Green, and Karen E. Hauer  
University of California, San Francisco School of Medicine and Department of Medicine

**PURPOSE:** To evaluate student satisfaction with physical examination instruction during a medicine clerkship on attending-only hospitalist services versus traditional ward teams.

**BACKGROUND:** Attending-only hospitalist services have been developed at academic centers due in part to resident duty-hour restrictions. The efficacy of these services as teaching venues for medical students has not been assessed.

**METHODS:** In 2006-07, third-year students on the internal medicine clerkship at a tertiary-care teaching hospital received physical examination instruction with the ward team attending and participated in a 1-hour physical exam session with a hospitalist attending at an affiliated hospital without housestaff. At the end of the clerkship, students rated their satisfaction with instruction from both attendings using a 5-point Likert-scaled survey (1=strongly disagree, 5=strongly agree).

**RESULTS:** 26 students participated to date in the one-time teaching session on the attending-only service; survey response was 100%. Students reported no difference in overall physical exam instruction between hospitalists on the attending-only service and ward attendings (3.6 vs. 3.9,  $p=0.16$ ), and they reported equal self-confidence in their own exam skills in both settings. Students perceived the attending-only service as a safer learning environment (4.3 vs. 3.7,  $p=0.01$ ). There was no difference in instructors' enthusiasm or time spent on skills practice. Students evaluated ward attendings higher as role models during patient interactions (3.8 vs. 4.3,  $p<0.01$ ).

**DISCUSSION:** Attending-only services are effective venues for physical examination instruction for medical students. Students perceived these services as safer learning environments than traditional wards, presumably because they were not evaluated on the attending-only service. Students likely rated ward attendings as better role models because they shared longitudinal relationships. However, students rated overall instruction comparably in both settings.

Results were submitted to a national hospital medicine meeting.

**REFLECTIVE CRITIQUE:** We received feedback from UCSF medical educators and students in the Medical Education Area of Concentration.

## **A “PROFESSIONALISM” COURSE FOR THE CLINICAL CLERKSHIPS: DEVELOPING A STUDENT-CENTERED CURRICULUM BY ASSESSING THIRD- YEAR MEDICAL STUDENTS’ PERCEPTIONS OF THEIR PROFESSIONAL CLIMATE**

Christina Lee<sup>1</sup>, Cindy Lai<sup>2</sup>, Adam Schickendanz<sup>1</sup>, John Maa<sup>3</sup>, Laura Hill-Sakurai<sup>4</sup>  
University of California, San Francisco<sup>1</sup> School of Medicine, Department of Medicine,  
<sup>3</sup> Department of Surgery, and <sup>4</sup> Department of Family and Community Medicine

**PURPOSE:** To create a student-centered professionalism curriculum by: (1) Extracting themes from students’ written reports of clerkship experiences; and (2) Developing panels and small group curricula based on these themes.

**BACKGROUND:** Third-year medical school curricula on professionalism must be directly relevant to student experiences on the wards and in clinics.

**METHODS:** In 2005-06 and 2006-07, all third-year medical students attended week-long courses after their first and third clerkships. Students wrote confidential “critical incident reports” describing experiences of exemplary and unprofessional behavior witnessed during rotations. Using an iterative consensus building process, investigators examined these reports to generate themes that were then used to pilot a revamped panel on professional roles. Themes of exemplary professional behavior were patient communication, teamwork, accountability, exemplary teaching, and respect for patients. Challenges to professional behavior were poor patient communication, compromised compassionate care, poor teamwork, disrespect toward team members, poor accountability, poor teaching, and resource allocation inequalities. Based on these themes, a discussion panel was revised so that faculty panelists reflected on realistic case vignettes of challenging clerkship experiences and described practical ways in which students might respond.

**EVALUATION PLAN:** The pilot panel was successful by qualitative comments and quantitative report (4.22 on a 5-point Likert scale [1= poor, 5= excellent]). A small group session following this panel was revamped so that the objectives addressed themes from student reports. The next steps will be to 1) revise future panels to address the identified professionalism issues, and 2) develop trigger tapes with clinical scenarios reflecting some of the unprofessional themes. These tapes will be used to trigger discussion in small groups.

**DISSEMINATION:** This project was submitted to a national internal medicine meeting, and a brief report is in preparation.

**REFLECTION CRITIQUE:** We have received feedback from UCSF medical educators and students in the Medical Education Area of Concentration.

# **FACTORS ASSOCIATED WITH AND THE IMPACTS OF RESIDENT TEACHING TIME IN THE ERA OF DUTY HOUR RESTRICTION**

Lindsay Mazotti, Arpana Vidyarthi, Robert Wachter, Andrew Auerbach, Patricia Katz  
University of California, San Francisco

## **PURPOSE**

To examine factors associated with residents spending less time teaching after duty hour restriction (DHR) and determine impact of time spent teaching on emotional exhaustion and patient care. We hypothesized that spending less time teaching would lead to less emotional exhaustion and a perception of higher quality patient care.

## **BACKGROUND**

Some residents spend less time teaching since DHR<sup>1</sup>. Although reports explored impact of DHR<sup>1-3</sup> on resident teaching time, well-being, and patient care, factors associated with time spent teaching remain unknown.

## **METHODS**

We surveyed 164 internal medicine residents at UCSF in 2003, after DHR, querying time spent teaching and completing administrative tasks, hours worked, frequency of emotional exhaustion, and satisfaction with patient care. Multivariate regression analyses identified factors associated with self-reported decreased teaching time, and the relationship between decreased teaching time, emotional exhaustion and satisfaction with patient care.

## **RESULTS**

One hundred twenty-five residents (76%) responded; 23% reported spending less time teaching. In multivariable models, PGY-2's and PGY-3's [OR 7.14, (1.56, 32.79), OR 8.23, (1.44, 47.09), respectively], those who reported working < 80 hours/week [OR 5.99 (1.11, 32.48)], and spending more time on administrative tasks [OR 1.03, CI (1.00, 1.06)] reported spending less time teaching. Residents who reported spending less time teaching reported less emotional exhaustion (p= 0.003) and more satisfaction with patient care (p=0.006).

## **DISCUSSION**

In this cross-sectional survey of internal medicine residents, we found that spending less time teaching is associated with higher perceived resident well-being and patient care satisfaction. Efforts should be made to optimize time spent teaching, including limiting administrative tasks and considering strategies for effective and efficient teaching modalities.

## **REFLECTIVE CRITIQUE**

Feedback was solicited at peer review sessions and ESCape Conference, resulting in modifications.

1. Vidyarthi A et al. Acad Med.2006;81(1):76-81.
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## **TEACHING PHYSICAL EXAMINATION AND MEDICAL SPANISH SIMULTANEOUSLY**

Adriana Padilla, Susan Hughes;  
UCSF Fresno Medical Education Program

**PURPOSE:** To study the effectiveness of a medical Spanish and clinical skills class attended by medical students interested in working with Spanish speaking patients. It is hypothesized that both a student's oral performance in medical Spanish and perceptions about clinical skill levels will improve.

**BACKGROUND:** This type of bilingual medical education has not been studied in the medical literature. Since 1999 this unique program has prepared students in developing medical Spanish competency while improving clinical skills

**METHODS:** An intensive summer program immersing students in conversational medical Spanish structured around basic adult and pediatric clinical skill competencies occurred. Students culminate with a day of clinical performance simulations with Spanish speaking volunteers to assess language acquisition. Pre and post self-reported assessment in clinical skills was analyzed. In 2003, independent pre and post assessment of Spanish language skills occurred via a standardized classroom oral competence interview administered by a language expert. Difference scores were analyzed to compare efficacy of the medical Spanish course.

**RESULTS:** In eight years 34 students have completed the medical Spanish and clinical skills course. On a 5-point scale, the mean improvement in adult exam competencies was 1.38 ( $t = 2.17$ ;  $p = 0.038$ ). On the same scale, the mean improvement in pediatric exam competencies was 1.91 ( $t = 13.12$ ;  $p < .0001$ ). Independent language assessment was performed for 14 students. On a scoring rubric of 9 phases, results ranged from a 1 to 4 phase improvement with a median of 2.

**DISCUSSION:** Implications show that bilingual medical education courses can be an effective tool to learn clinical skills while supporting language acquisition.

**REFLECTIVE CRITIQUE:** Peer review/feedback has occurred at STFM and at AAMC IME. Future peer review plans include submission to AAMC MedEd portal and Family Medicine Digital Resource Library prior to publication.

## **ENCOURAGING RURAL AND UNDERSERVED INTEREST IN MEDICAL STUDENTS AT A REGIONAL CAMPUS: IMPACT OF MODEL FRESNO**

Adriana Padilla, Susan Hughes  
UCSF Fresno Medical Education Program

**PURPOSE:** Compare UCSF medical students for residency match and practice location after residency based on their primary care experience at the Fresno Regional Campus.

**BACKGROUND:** In California, rural and urban underserved training tracks are not common, with only a few successfully implemented at medical training institutions. Fresno Regional Campus provides care to a primarily Hispanic urban underserved and rural population. A unique 6-month clinical experience, Model Fresno aims to foster medical student interest in rural and underserved populations and impact regional need.

**METHODS:** All students who attended UCSF from 1997 until 2005 were divided into three cohorts: Model Fresno participants, students who did their family medicine or pediatrics core clerkships in Fresno, and all other UCSF students. The percentages that matched into primary care residencies were calculated for each cohort and compared using chi-square. Practice addresses of those completing residency will be used to determine the percentage of each cohort practicing in a rural or underserved area as defined by the California Office of Statewide Health Planning and Development.

**RESULTS:** UCSF had 1368 medical students in this time frame; 68 students participated in Model Fresno and 151 had a primary care clerkship in Fresno. Primary care match rates were 63%, 68% and 54% for Model, Fresno clerkship and UCSF respectively ( $\chi^2 = 11.2$ ;  $p < 0.01$ ). Twenty-three Model participants completed residency; 15% in rural practice and 23% underserved.

**DISCUSSION:** Students with either Model Fresno experience or a primary care core clerkship in Fresno matched into primary care at a significantly higher rate than other UCSF medical students. When the practice location analysis is complete we plan to publish the results.

**REFLECTIVE CRITIQUE:** Peer review/feedback has occurred at STFM and AAMC IME. Future peer review plans include submission to AAMC MedEd portal and Family Medicine Digital Resource Library prior to publication.

## **MULTIDISCIPLINARY SERVICE-LEARNING: A MEDICAL-LEGAL COLLABORATION FOR THE URBAN UNDERSERVED**

Christopher R. Peabody<sup>1</sup>; Erica Pham<sup>2</sup>; Sharad Jain<sup>1</sup>. <sup>1</sup>University of California, San Francisco, San Francisco, CA; <sup>2</sup>University of California, Hastings School of Law, San Francisco, CA.

**PURPOSE:** The objectives of this project are to (1) establish a legal services program at UCSF Student Homeless Clinics (USHC) in conjunction with UC Hastings, and (2) create collaborative learning and working relationships between medical and law students through a joint seminar series.

**BACKGROUND:** USHC have provided medical care to underserved individuals for over 12 years. Many homeless and low-income patients, with complex life circumstances, might benefit from access to integrated medical and legal services. Additionally, medical students have little opportunity to interact with colleagues from different disciplines despite the growing trend towards multidisciplinary care models.

**METHODS:** The legal services program is based on the medical service-learning model established previously at USHC. Under the guidance of supervising attorneys from non-profit organizations and a global law firm, law students provide weekly on-site legal advice aimed at navigating the web of San Francisco's legal safety-net. The joint seminar series is composed of medical and law students who volunteer at USHC, and its curriculum is focused on areas where the fields of medicine and law intersect. The seminar meets weekly for eleven weeks; topics include foster care, prisoner health, and homeless health-policy issues.

**EVALUATION PLAN:** Eleven law students and 13 medical students enrolled in the seminar. Satisfaction data was obtained through written evaluations at the end of the course from 20 participants (response rate 83%). Students were asked on a 5-point scale to "strongly agree" (5) or "strongly disagree" (1) whether the course exposed students to role models working with the underserved; nineteen students (95%) marked 5 and one student (5%) marked 4.

**DISSEMINATION:** This project will be presented at the national Society of General Internal Medicine conference, and will be submitted for publication.

**REFLECTIVE CRITIQUE:** Feedback obtained through written evaluations will be used to modify the seminar series offered next year.

## **THE USE AND EFFECTIVENESS OF ROTATION-SPECIFIC OBJECTIVES AMONG ACADEMIC FOOT AND ANKLE SURGEONS**

Stephen Pinney\*, MD, M.Ed, FRCS(C). Shepard Hurwitz\*\*, MD.

\*UCSF Department of Orthopaedic Surgery

\*\*University of Virginia School of Medicine, Department of Orthopedic Surgery

**PURPOSE:** The purpose of this study was to determine whether rotation-specific objectives are perceived as an effective learning tool by a discrete group of teaching physicians.

**BACKGROUND:** The Residency Review Committee (RRC) of the Accreditation Council for Graduate Medical Education (ACGME) requires residency training programs to outline the learning goals for each resident rotation. These rotation-specific objectives should 1) guide resident learning by identifying relevant content to be learned, and 2) outline the goals of each resident rotation for the purpose of external certification.

**METHOD:** Academic orthopaedic surgeons responsible for teaching residents about foot and ankle surgery served as the study population. A survey and cover letter was created and sent to one hundred and thirty one academic orthopaedic foot and ankle surgeons. A total of ninety-three surveys were returned for a total response rate of seventy-one percent.

**RESULTS:** Fifty-seven of ninety-three respondents (61.3%) either did not use rotation-specific objectives (47/93) or believed their rotation-specific objectives were not an effective learning tool (10/46).

**DISCUSSION:** The results of this study show that rotation-specific objectives are not a central component of the educational process for most orthopaedic foot and ankle rotations. This study group has clearly defined and uniform goals with respect to residency training. We suspect that the results from this study can be generalized to teaching physicians in other disciplines within medicine.

**CONCLUSION:** Rotation-specific objectives are not an effective learning tool according to the majority of orthopaedic foot and ankle surgeons involved in teaching residents. Resident educators need to develop ways to make the use of rotation-specific objectives more central to the educational process in order to ensure that they are used effectively.

## **A SURVEY OF TRANSITION COURSES TO PREPARE MEDICAL STUDENTS FOR CLERKSHIPS**

Ann Poncelet, MD & Bridget O'Brien, PhD

### **PURPOSE:**

To describe the structure and content of transition courses offered immediately prior to students' entry into the clerkships.

### **BACKGROUND:**

The transition from pre-clerkship to clerkship education is identified as a particularly stressful experience for medical students. Transition courses are rarely described in the literature and the AAMC curriculum database provides little information about them.

### **METHOD:**

Fifty-six of 125 U.S. medical schools (45%) responded to a survey about transition courses. Thirty-one of the 56 schools (55%) had a transition course in 2003 and provided information about its structure and content. Four trained investigators systematically coded and verified the surveys. The coded data were entered into a statistical program (SPSS) to generate descriptive statistics.

### **RESULTS:**

The transition courses are highly diverse with respect to structure and content. Course lengths ranged from 1 day to 7 weeks, with the majority lasting up to one week. The most common format was large group sessions. On average, more than one format was used, particularly among courses lasting one week or more. Nearly all schools included clinical skills content. Other common topics were preparation for clinical settings, safety/infection precautions, fund of knowledge, professionalism, and student well being. Courses covered 7 content areas, on average.

### **DISCUSSION:**

More than half of the schools in this study committed time and resources to facilitate students' transition to the clerkships. Schools' goals and approaches to these initiatives were rich and informative, but inconsistent. Further investigation is needed to ascertain whether successful transition is better achieved through these courses than through preclerkship doctoring courses alone and what structure and content of a preparatory course is most effective.

### **REFLECTIVE TECHNIQUE:**

The survey was reviewed by medical education experts at UCSF and the Harvard Macy Program for Physician Educators. The data analysis was received input from Office of Medical Education. A draft of the paper was reviewed at EEscape.

## **A TRAINING MANUAL TO DEVELOP CASE-BASED ONLINE LEARNING MODULES**

Ann Poncelet, MD; Lowell Tong, MD; Anna King

**PURPOSE:** Create a training manual for developing interactive, case-based web modules in medical education.

**BACKGROUND:** Medical training is increasingly accomplished through patient simulation. One method is through interactive, case-based web modules, which are easily accessible, standardized, enable active learning, and allow assessment of student performance. The authors decided web-based learning modules would address interdisciplinary needs for their newly integrated clerkship, but had expertise only in pedagogy and medicine. Office of Educational Technology colleagues provided web expertise. Case construction and video production expertise were developed as the first module was created. Following web module implementation, faculty from UCSF and elsewhere expressed interest in developing similar web modules.

**METHODS:** The literature and on-line resources were reviewed for existing training manuals. The components of the manual were determined by reviewing notes of the authors' own process and production of the first two modules, and notes of meetings with colleagues who sought the authors' expertise. A draft manual was created and will be reviewed by our technology colleagues. A targeted review of the literature will precede completion of the manual.

**RESULTS:** The training manual's essential components were defined. The manual is under construction. Components include: learning principles and curricular development; choosing technology to support goals; case development; creating a production team, story board and video clips; organizing access, privacy and management; piloting and modification; assessment; collaboration with educators and technologists.

**DISSEMINATION:** Faculty, residents, students and technologists are the target audience. It will be disseminated in document and web-based formats through the UCSF Academy of Medical Educators, the Office of Educational Technology and Center for Instructional Technology; and submitted for publication in a peer-reviewed journal and the ACGME Med Ed Portal.

**REFLECTIVE CRITIQUE:** An assessment tool will be built into the manual. The authors will create a process to keep the manual current.

## **DEVELOPMENT AND USE OF A CURRICULUM MAP FOR DOCUMENTING, NAVIGATING, AND MODERNIZING TOBACCO-RELATED TEACHING IN THE UCSF SCHOOL OF MEDICINE**

Judith J. Prochaska, PhD, MPH,  
University of California, San Francisco, Department of Psychiatry  
Akpene Gbegnon, Jacob Gregerson, John Maa, MD, Stanton Glantz, PhD,  
University of California, San Francisco, Department of Medicine

**PURPOSE:** This curriculum innovation aimed to develop a dynamic heuristic for documenting, navigating, and modernizing tobacco-related training in the UCSF School of Medicine curriculum across all four years of training.

**BACKGROUND:** Tobacco is the leading preventable cause of morbidity and mortality in the US. When lives saved, quality of life, and cost-efficacy are considered, treating smoking is considered one of the most important activities a physician can do. Evidence-based training is needed to ensure an adequate skill base for future physicians to effectively treat nicotine addiction.

**EVALUATION PLAN:** Tobacco-related content in the UCSF School of Medicine curriculum was systematically identified through searches in ILIOS and keyword searches of curriculum syllabi from the first two years of training. Clinical training in the third and fourth years was evaluated by separate surveys of clerkship directors and recent graduates. A comprehensive curriculum map was created to showcase all of the tobacco-related training with dynamic access to relevant syllabi sections. The curriculum map allowed for identification of gaps in training and content areas that required updating.

**DISSEMINATION:** An online thematic curriculum map was created to present all of the material in a single resource for students and faculty. The map is linked as a resource in iRocket within all relevant blocks and clerkship rotations. We are tracking use of the curriculum map and plan to update it to reflect changes in the curriculum. The map may serve as a model for other curriculum themes that cut across multiple years of training.

**REFLECTIVE CRITIQUE:** A working group among the study authors allowed for collaborative feedback in designing the project and overseeing its implementation and evaluation. Additional input was gathered from medical students in the UCSF Curriculum Ambassadors Program as well as consultation with Block and Clerkship Directors, course faculty, and administrators.

**FUNDING:** This work was supported by a Haile T. Debas Academy Curriculum Innovations Award.

## WHAT ARE THE LEARNING STYLES OF PRE-MEDICAL STUDENTS IN LOWER AND UPPER DIVISION SCIENCE COURSEWORK?

Amanda del Rosario<sup>1</sup>, Huy Ngo<sup>1</sup>, David Joun<sup>2</sup> and Jennifer Breckler<sup>2,3</sup>, UCSF Post-Baccalaureate Program<sup>1</sup>, San Francisco State University<sup>2</sup> and UCB/UCSF Joint Medical Program<sup>3</sup>.

### PURPOSE:

Students experiencing difficulties in pre-medical classes may be mismatched between the course teaching and their learning styles. If the mismatch prompts the student to drop from the pre-med track, we would anticipate a difference in the learning styles of those continuing (upper division) and those enrolled in lower division courses. Since the lower division science courses consist of both laboratory and didactic lecture components, high grades and hence success might favor students with multimodal learning styles. We hypothesized an increase in the percentage of multimodal learners as pre-medical students progress from lower to upper division science courses.

### BACKGROUND:

Little published data exists on learning styles of pre-medical students. According to the VARK survey instrument, learning preferences can be characterized in four basic ways, i.e. V=Visual, A=Auditory, R=Read/write, and K=Kinesthetic.

### METHODS:

This is a cross-sectional study. The VARK questionnaire was administered to students at San Francisco State University, a large urban university with a large minority enrollment. Students with multimodal styles were defined as having 3-4 learning preferences. During 2006, we surveyed 3 lower division and 3 upper division science courses. We compared the learners in the two levels using chi-square.

### RESULTS:

74 lower division and 77 upper division students indicated “Physician” as their career choice. There was no significant difference in the proportion of lower division students who were multimodal in their learning style compared to upper division students ( $p=0.17$ )

	# unimodal(%)	# bimodal(%)	# multimodal(%)
Lower-Division courses (n=74)	29 (39.2%)	8 (10.8%)	37 (50%)
Upper-Division courses (n=77)	29 (37.7%)	18 (23.4%)	30 (38.9%)

### DISCUSSION:

Contrary to our hypothesis, pre-medical multimodal learners were not more prevalent in upper division courses. Perhaps those students interested in a career in medicine were multimodal learners prior to enrollment at SFSU.

### REFLECTIVE CRITIQUE:

We have received critique through ESCape to revise this abstract.

## **DEVELOPING A DIDACTIC CURRICULUM FOR CHRONIC CARE**

Hendrickson, C and Saad, N University of California, San Francisco

**PURPOSE:** To develop a didactic curriculum for the management of chronic illness for medical students.

**BACKGROUND:** UCSF students are taught pathophysiology, pharmacology and medical management of chronic diseases throughout the essential and clinical core but are not provided with a framework to address chronic care management. The chronic care model developed by Tom Bodenheimer, Ed Wagner and Kevin Grumbach is becoming the standard of care in the clinical setting; however, it is not comprehensively integrated in the didactic curriculum.

**METHODS:** We developed an outline for the specific implementation of a didactic chronic care curriculum within the established structure of the Essential and Clinical cores, an introductory lecture on the chronic care model to be presented during the first year of the essential core, and a scheme for revisiting the model during lectures and small groups throughout the essential core in the context of specific chronic diseases using templates for lectures and small groups.

**EVALUATION PLAN:** We will assess how changes in the curriculum are implemented using the templates we developed. We also plan to survey students' knowledge and attitudes before and after the introductory lecture.

**DISSEMINATION:** This project was presented at the Essential Core Curriculum Committee in February 2007. We will continue to present our developed materials to essential core course directors and the materials will be published in the course syllabi. References: Improving chronic illness care, a national program of the Robert Wood Johnson Foundation: <http://www.improvingchroniccare.org/> Bodenheimer T, Wagner EH, Grumbach K. Improving primary care for patients with chronic illness. JAMA 2002, Oct 9; 288(14):1775-9. Bodenheimer T, Wagner EH, Grumbach K. Improving primary care for patients with chronic illness: the chronic care model, Part 2. JAMA 2002 Oct 16; 288(15):1909-14. Holman H. Chronic disease--the need for a new clinical education. JAMA. 2004 Sep 1;292(9):1057-9.

## **FELLOWS' COLLEGE: A MODEL 3 YEAR PROGRAM TO "JUMP START" ACADEMIC CAREERS OF ACGME SUBSPECIALTY FELLOWS USING EARLY FACULTY PROFESSIONAL DEVELOPMENT TOOLS**

HC Chen<sup>1</sup>, S van Schaik<sup>1</sup>, A Teherani<sup>2</sup>, NI Nemenzo<sup>1</sup>, P O'Sullivan<sup>2</sup> and MA Shafer<sup>1</sup>  
<sup>1</sup>UCSF Dept. of Pediatrics and <sup>2</sup>UCSF Office of Medical Education

**PURPOSE:** This study describes a needs assessment for the Pediatric Fellows' College. We solicited perceptions of graduating pediatric fellows with no formal program on becoming an academic faculty.

**BACKGROUND:** Academic subspecialty fellowships are managed as small, autonomous apprenticeships focusing on clinical and laboratory skills yet need to develop skills to ensure successful transitions as faculty. In 2005, we initiated a Fellows' College across pediatric fellowships with workshops, individualized learning plans and active engagement with an oversight committee.

**METHODS:** 15 fellows who completed pediatric subspecialty training at UCSF (2006) with limited exposure to the Fellows' College voluntarily completed an IRB approved exit interview and 30 item 5 point Likert items (strongly agree (5)-strongly disagree (1) on fellowship experiences. Two trained interviewers external to the Department of Pediatrics conducted the interviews. The two interviewers reviewed notes and summarized the themes from the interviews. They calculated means/SD's for the survey items.

**RESULTS:** All fellows participated. The survey results showed: 18/30 items had means  $\geq 4.0$  (SD +/-0.51-1.2) including: would recommend fellowship, can multitask several projects (research, clinical, teaching), developing mentor network, know requirements to achieve academic success. 12/30 items fell below 4.0 (SD +/- .89-1.46) including: collegiality, mentorship, work-life balance, support for research, and teaching skills. Interviews reported support for centralized curricula: laboratory techniques, clinical research tools, and mentorship. Fellows perceived that the new Fellows' College was valuable for information, skill building, and collegiality.

**EVALUATION PLAN:** The needs assessment provides insight into characteristics for a new model for fellows' education and identified curricula that could enhance the fellowship experience to ensure successful transitions to early faculty.

**DISSEMINATION:** We plan abstracts and manuscripts on the evaluation of this program.

**REFLECTIVE CRITIQUE:** We have used this initial data to begin to make changes in the curricula and more clearly communicate about the College.

## **STUDENTS'S PERCEPTIONS OF A COMMUNITY HEALTH CURRICULUM IN A CORE CLERKSHIP**

William Shore, Patricia O'Sullivan, Susan Runyan, Naomi Wortis, Margo Vener, Maria Wamsley

**PURPOSE:** To determine students' perceptions of the community health curriculum required in the Family and Community Medicine Clerkship (FMC 110).

**BACKGROUND:** Students complete a required community health project and present their work at the conclusion of the clerkship. Students' enthusiastic presentations fail to match their overall course evaluations. We needed to probe the students' perceptions.

**METHODS:** We surveyed all Family and Community Medicine (FCM) 110 students on the last day of the clerkship for nine rotations across two academic years with four items rated from strongly agree (1) to strongly disagree (5). We calculated descriptive statistics and correlated responses.

**RESULTS:** 132 students (78.1%) responded. Students agreed that the community assessment helped them understand how the community impacts health (2.08, sd=0.87) and helped in doing the preventive medicine project (2.28, sd=1.05); that they were likely to do community work in the future (1.78, sd=0.93) and the curriculum influenced their decision concerning community work (2.29, sd=0.7). Perceptions about the curriculum correlated with undertaking the preventive medicine project ( $r_s = .40$ ;  $p < .001$ ) and the decision to work in the community ( $r_s = .42$ ;  $p < .001$ ).

There was a relationship between how the curriculum helped in doing preventive medicine and the influence of the curriculum on the decision to do community work ( $r_s = .29$ ;  $p < .001$ ).

**DISCUSSION:** These results confirmed our observations that students understand the value of the community health curriculum in the FCM 110 clerkship. At the Society of Teachers of Family Medicine (STFM) 2007 Predoctoral Education Conference national educators were impressed with our ability to integrate this curriculum into the required clerkship, the breadth of the projects, and the positive perceptions.

**REFLECTIVE CRITIQUE:** We received feedback on the study at STFM. We consulted with Pat O'Sullivan (OME). From this feedback, in a next study will help us revise our survey and consider future studies.

## **A CARDIAC PHYSICAL EXAMINATION CURRICULUM FOR ALL FOUR YEARS OF MEDICAL SCHOOL- INNOVATIONS WITH THE FIRST YEAR STUDENTS**

Rebecca Shunk, MD (Department of Medicine, SFVAMC) Cindy Lai, MD (Department of Medicine, DGIM, UCSF), Jenny Espinoza, MD (Department of Medicine, SFVAMC) Jeff Kohlwes, MD, MPH (Department of Medicine, SFVAMC) Kevin Souza, MS, (Office of Educational Technology, UCSF), Karen Hauer, MD (Department of Medicine, UCSF)

**PURPOSE:** The goal of the curriculum is to improve knowledge, skill and assessment of the cardiac physical examination in all four years of medical school.

**BACKGROUND:** The lack of proficiency in cardiac physical examination has been established (1). UCSF students' evaluations have noted deficiencies in physical examination teaching and observation. Computer-based tools are an effective way to enhance teaching of cardiac physical examination (2).

**METHODS:** We have implemented new computer-based curricular components to the first year cardiovascular block utilizing Blaufuss Multimedia technologies:

- 1) Cardiac physical exam standardized patient sessions were augmented with computer-based video and audio of actual patients. Previously students read a description of the murmur on an index card.
- 2) In the new introductory Cardiac Physical Exam Lecture all students used infrared headsets to listen to heart sounds while viewing a multimedia presentation allowing them to see and hear the heart, and to interact with the instructor.
- 3) Required coursework for the cardiovascular block was augmented with multimedia resources that taught basic cardiac physical examination and heart sounds.

We continue to develop the third and fourth year curricula.

**EVALUATION PLAN:** Over the four-year curriculum, students will take knowledge-based examinations, attitudinal surveys and a validated cardiac auscultatory skills-based exam.

**DISSEMINATION:** Sample curricula will be demonstrated at the Society of General Internal Medicine 2007 Annual Meeting. We also plan to publish our results. The Introduction to the Cardiac Physical Exam Lecture slide set will be available.

**REFLECTIVE CRITIQUE:** The E\*value system and our attitudinal survey solicits feedback. The curriculum will be adapted based on learner comments.

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## **ONLINE TUTORIAL TO TEACH EVIDENCE-BASED MEDICAL LITERATURE SEARCHING**

Josephine P.G. Tan, University of California, San Francisco  
Keir Reavie, University of California, Davis  
George Sawaya, University of California, San Francisco  
Eva Aagaard, University of Colorado Health Sciences Center

### **PURPOSE**

Develop, deploy, and evaluate an online tutorial for third-year medical students to teach how to effectively search PubMed and Cochrane Library databases to find the best literature to assist in clinical decision making (CDM).

### **BACKGROUND**

Engaging medical students to learn literature search skills and apply them to the practice of evidence-based medicine is often challenging. Creating an online tutorial allows students to learn at their own pace and convenience. Making the tutorial interactive reinforces learning the new skills that can be applied to exercises within the tutorial.

### **METHODS**

Librarians and faculty collaborated to create an interactive online tutorial using Adobe Captivate™ software that simulates an actual literature search interaction. Students were required to take the tutorial after a CDM lecture. Librarians held an optional drop-in session in the computer lab. Students (n=154) were asked to rate the ease of use and overall value of the online tutorial using a 5-point Likert scale (1=poor, 5=excellent). Results were compared to those of the prior year's sessions that librarians taught in person.

### **EVALUATION PLAN**

Eighty-six students (56%) completed the evaluations. They rated the ease of use 4.20 (SD=0.87) and the overall value of the tutorial 4.22 (SD=0.87). The score for rating the usefulness of the prior year's sessions led by librarians teaching the same material in person was 3.51 (SD=0.97, n=136, 99 (73%) students responded). Twelve students provided written comments. No students attended the optional drop-in computer lab session.

### **DISSEMINATION**

Presented as a talk at 2006 Medical Library Association regional conference. A poster will be presented at 2007 Western Group on Education Affairs Conference.

### **REFLECTIVE CRITIQUE**

Results suggest that an online tutorial can be an effective way to teach students how to search for evidence-based medical literature. Student comments will help in updating and improving the online tutorial for next year's class.

## **A STRUCTURED MOCK CODE CURRICULUM FOR PEDIATRIC RESIDENTS.**

Sandrijn van Schaik<sup>1</sup>, Isabelle Von Kohorn<sup>1</sup>, Shelley Diane<sup>2</sup> and Patricia O’Sullivan<sup>3</sup>

<sup>1</sup> Department of Pediatrics and <sup>2</sup> School of Nursing <sup>3</sup> Department of Medicine, University of California San Francisco

**PURPOSE:** Pediatric residents gain limited experience with resuscitation because cardiopulmonary arrests (“codes”) are uncommon events in pediatrics. We developed a structured mock code curriculum for pediatric residents to improve confidence in resuscitation skills.

**BACKGROUND:** Mock codes are used to teach residents resuscitation skills. In traditional mock codes, the most confident trainees volunteer to take on essential roles. This does not create room for trainees with less experience and confidence to enhance their skill and confidence levels. Frequently, most time during mock code scenarios is dedicated to the actual scenario, and little to none to debriefing.

**METHODS:** We developed a series of 1-hour simulation session centered around 2 short simulation scenarios, in which pediatric residents and nurses have pre-assigned roles. These roles include (amongst others) team leader, assessment and management of airway and breathing, bedside nurse, and charge nurse. Some participants are instructed to observe others with active roles. Each scenario is followed by debriefing, during which observing participants give feedback to active participants based on a specific set of questions.

**EVALUATION PLAN:** We surveyed residents prior to institution of the curriculum to assess levels of confidence in resuscitation skills and past exposure to real and mock codes. We plan to repeat the survey after 6 and 12 months to evaluate the impact on level of confidence. In the first 5 months, 11 sessions were held with a total of 62 residents.

**DISSEMINATION:** The impact of the curriculum will be assessed from the survey results and described in a manuscript for peer-reviewed publication.

**REFLECTIVE CRITIQUE:** The initial plan was discussed during an Escape meeting, and based on feedback received, future assessments will include skills assessment. Survey results as well as informal feedback from participants and comments from reviewers of submitted manuscripts will be used to amend the program as needed.

## **OVERCOME BARRIERS IN DISCUSSING ADVANCED DIRECTIVES AND CODE STATUS WITH PATIENTS.**

N.Volkova, G. Bird, I. Darden, M. Peterson. Department of Internal Medicine.  
UCSF-Fresno.

**PURPOSE:** To teach and motivate all medical residents to increase the frequency of advanced directives and code status discussions with their patients by designing and conducting hands on work shop using trained actors in patients case simulations with videotaping for better feedback.

**BACKGROUND:** Currently available literature suggests that the barriers to the advanced directives or codes status discussion are largely related to lack of knowledge and erroneous beliefs about the effectiveness of cardiopulmonary resuscitation.<sup>1</sup> Sixteen years after passage of the Patient Self-Determination Act<sup>2</sup> there appears to be little focus on this issue in medical students or residency training. Although federally mandated, the standards outlined may not be appropriately met at the present time. At our teaching hospital, we evaluated a total of 494 consecutive patients admitted for acute inpatient care on internal medicine services. Only 10.5% code discussions were documented in the initial admission.

**METHODS:** Survey for internal medicine residents exploring the most important barriers will be conducted first. After survey analysis a 4- hour workshop will be introduced with the following components: historical introduction, literature review and basic principals; review of the three videotaped patient encounters, next participants will be videotaped doing advanced directives and code status discussion with immediate feedback given by the faculty.

**EVALUATION PLAN:** Survey will be conducted again followed by another random cohort of 500 consecutive admissions to evaluate the perceived and actual impact on the trainees within 6 months after workshop.

**DISSEMINATION:** This workshop can be used by all other residency training programs at UCSF-Fresno, and also by practicing physicians as a part of their continuous medical education.

**REFLECTIVE CRITIQUE:** The consequent survey of the trainers will give us the understanding what should be modified in the workshop. We plan to present this project at ACP and SGIM meetings to solicit further feedback.

<sup>1</sup> Morrison RS, Morrison EW, Glickman DF. Physician reluctance to discuss advance directives. An empiric investigation of potential barriers. Arch Intern Med. 1994 Oct 24;154(20):2311-8.

<sup>2</sup> <http://www.dgcenter.org/acp/pdf/psda.pdf>

## **'HAND-OFF' REFORMS AT THE UCSF-FRESNO INTERNAL MEDICINE RESIDENCY PROGRAM.**

N.Volkova, U. Javed, C. Fletcher, S. Stoltz, M. Peterson.  
Department of Internal Medicine. UCSF-Fresno.

**PURPOSE:** To improve the transfer of patients care for any patient admitted to the hospital by implementing LastWord (Hospital information system) based written 'hand-offs' and teaching residents how to effectively verbally sign-out.

**BACKGROUND:** The new 80-hour workweek has increased the number of 'hand-offs'. Furthermore, the Joint Commission on Accreditation of Hospital Organizations requires implementing a standardized approach to 'hand-off' communications, including an opportunity to ask questions. Also a little is known about teaching residents effective 'hand-off' and communication techniques.

**METHODS:** To improve the 'hand-off' procedure in our institution, we designed a multifaceted intervention that changed the way residents transfer patients care and Medical/Surgical Registered Nurses (RNs) find the responsible physicians. Initial survey of the all internal medicine residents and RNs on their perceived quality of the written and verbal sign-outs during day and night shifts will be followed by another survey after 4 weeks of the pilot trial. Training of the senior residents to become a future 'sign-out coach' will be accomplished during this study.

**RESULTS:** A total of 48 out of 49 residents were surveyed. More than 4 minutes was required to update one patient written 'hand-off' by 52% of the residents. Initial survey involving 45 RNs revealed that 43% of the day shift and 62% of the night shift RNs needed more than 4 minutes an average to find the doctor whom to page. The clarity of the answers to the RNs raised questions was rated as average by 92% of day shift and 80% of the night shift.

**DISCUSSION:** Preliminary results prior to intervention reveal that there is a lot of space for improvement in current 'hand-off' procedures. Implementing protected and quiet time to transfer of patients care accompanied with well updated written 'hand-offs' expected to make a big difference.

**REFLECTIVE CRITIQUE:** The project was also discussed with the expert in the 'hand-off' for physicians Dr A. Vidyarthi (UCSF).

## **TEACHING RESIDENTS TO TEACH: THE IMPACT OF A LONGITUDINAL MULTIDISCIPLINARY FELLOWSHIP TO IMPROVE TEACHING SKILLS**

Maria A. Wamsley, Margo H. Vener, Patricia O'Sullivan, Katherine A. Julian  
University of California, San Francisco

**PURPOSE:** This study evaluated the impact of a longitudinal multidisciplinary teaching fellowship on self-perceived teaching skills of resident participants. We hypothesized that the longitudinal nature of the fellowship would facilitate retention of curriculum and improve self-perceived teaching skills.

**BACKGROUND:** Residents in core clinical training programs have primary responsibility for teaching medical students on the inpatient wards, yet many receive no formal teaching instruction. To date, there has been no study examining the effects of a longitudinal teaching skills curriculum in a group of multidisciplinary residents that includes both medical and surgical specialties.

**METHODS:** Residents received instruction on creating a positive learning climate, bedside teaching, small-group teaching, teaching microskills, large-group presentations, feedback, leadership skills, and assisting the learner in difficulty. 31 out of 54 participants completed both pre and post validated self-assessment inventory for teaching and pre-post self-efficacy survey.

**RESULTS:** Survey results showed a significant increase in participants' self-rated teaching skills in all categories of the self-assessment inventory for teaching. The effect size indicated the fellowship had a large effect on ratings in seven of the categories and a moderate effect one category. Results of the self-efficacy survey revealed statistically significant increased participant confidence in teaching skills in all areas.

**DISCUSSION:** Residents in all specialties are eager to improve their teaching skills and benefit from a multidisciplinary learning group. A longitudinal teaching curriculum increases resident interest in teaching and impacts self-efficacy and self-assessed teaching skills. We have submitted a manuscript that is currently in review.

**REFLECTIVE CRITIQUE:** We presented our findings at ESCape and our colleagues suggested that including learner evaluations of fellowship participants before and after participation would strengthen our study. We are currently in the process of obtaining and analyzing this data.

## **PROGRAM IN MEDICAL EDUCATION FOR THE URBAN UNDERSERVED (PRIME-US)**

Elisabeth Wilson, MD, MPH, UCSF

Karen Sokal-Gutierrez, MD, MPH, UCB-UCSF Joint Medical Program (JMP)

Paula Fleisher, MA, UCSF

### **PURPOSE**

To describe PRIME-US, a new longitudinal track for students interested in working with urban underserved populations.

### **BACKGROUND**

The IOM has recommended the creation of novel educational approaches to better equip physicians to work with the diverse populations and reduce health care disparities. Research on targeted medical education programs has also shown positive effects on student goals to practice in underserved areas. In response, UCSF and the JMP are launching PRIME-US, a new track focusing on the urban underserved.

### **METHODS**

The curriculum builds on the unique expertise of UCSF, UCB and UCSF-Fresno faculty and community leaders. Curricular components include orientation, experiential seminars, clinical placements in community health centers and public hospitals, and longitudinal community service and/or research projects. All participating students will receive a Masters Degree. A mentorship program is also in place to ensure academic and social success.

### **EVALUATION PLAN**

To evaluate PRIME-US, we have developed a prospective study design including both formative and summative measures, as well as quantitative and qualitative methods. Students will be tracked over time with surveys, interviews and focus groups. Data from participating faculty and community members will also be collected. Outcomes include: participation in and satisfaction with program activities; knowledge, skills and attitudes relevant to the care of underserved populations; and career intentions.

### **DISSEMINATION**

PRIME-US is the lead presenter for a panel at 2007 Western Group on Educational Affairs Annual Conference. We are currently on the Admissions website and will be developing a program-specific wiki and website over the next year. We will seek to publish the results of our evaluation in medical education journals.

### **REFLECTIVE CRITIQUE**

Feedback from students is solicited via seminar evaluations, group discussion and individual sessions. Focus groups will also be conducted. Modifications have already been made based on student feedback. Faculty and community participants will complete surveys.

## **FACTORS ASSOCIATED WITH A CAREER CHOICE IN ACADEMIC OBSTETRICS AND GYNECOLOGY**

Marya G. Zlatnik, Miriam Kuppermann, Amy M. Autry, Lee A. Learman  
University of California, San Francisco; Department of Obstetrics, Gynecology, and  
Reproductive Sciences; San Francisco, California

### **PURPOSE**

Our objective was to identify factors available in residency applications that are predictive of obstetrics and gynecology residents' choosing careers in academic medicine. We hypothesized that residency applicants would express their intended future practice setting in their personal statements.

### **BACKGROUND**

A shortage of qualified graduates interested in a career in academic medicine has been noted in many specialties, including obstetrics and gynecology. The resident selection process may help identify potential academicians.

### **METHODS**

We reviewed the Electronic Residency Application Service (ERAS) applications of 50 residents to collect variables hypothesized to predict a future career in academic medicine. The application essays were reviewed by evaluators blinded to outcome for statements indicating intent to enter fellowship training, academics, or private practice. These variables were compared with the residents' later practice settings.

### **RESULTS**

Eight of 15 residents (53%) who specifically stated they intended to enter academics did so compared to 23% of those who did not state a specific intention ( $p = 0.037$ ). Sixty-seven percent of men entered academic medicine versus only 28% of women ( $p = 0.059$ ). Several other application variables did not differ significantly between practice settings.

### **DISCUSSION**

A specific statement of intent to pursue a career in academic obstetrics and gynecology in the ERAS essay may be predictive of a future decision to pursue a career in academic medicine.

### **REFLECTIVE CRITIQUE**

Feedback was sought from my mentors, as well as through a formalized program at *The American Journal of Obstetrics and Gynecology* wherein a journal reviewer provides formal feedback on a paper prior to the submission for review. This feedback was incorporated into the final revisions of the paper. The project will be disseminated via presentation at the Association of Professors of Gynecology & Obstetrics meeting 3/07 in addition to submission to *AJOG*.



# Contributors to Medical Education Day

This list is provided to facilitate communication among our community of medical educators.

Authors	page		Department	Email
Eva Aagaard	49		University of Colorado Health Sciences Center	Eva.Aagaard@UCHSC.edu
Leila Alpers	7	17	Medicine	LAlpers@medsfgh.ucsf.edu
Nancy Ascher	25	32	Surgery	aschern@surgery.ucsf.edu
Andrew Auerbach	36		Medicine	ada@medicine.ucsf.edu
Amy M. Autry	33	55	Obstetrics, Gynecology and Repro Sci	autrym@obgyn.ucsf.edu
Timothy Berger	18		Dermatology	bergert@derm.ucsf.edu
G. Bird	51		UCSF Fresno Medical Education Program	garrett.bird@fresno.ucsf.edu
Elizabeth Boyd	27		School of Pharmacy	boyde@pharmacy.ucsf.edu
Jennifer Breckler	44		San Francisco State University, UCB/UCSF Joint Medical Program	jbreck@sfsu.edu
June Chan	27		Epidemiology and Biostatistics	JChan@urology.ucsf.edu
Cynthia Chen	18		Student Affairs	Cynthia.Chen@ucsf.edu
H. Carrie Chen	19	26	Pediatrics	chenhc@peds.ucsf.edu
Eva H. Chittenden	8	9	Medicine	evac@medicine.ucsf.edu
Calvin L. Chou	30		Medicine	calvin.chou@ucsf.edu
Chad Christine	21		neurology	chad.christine@ucsf.edu
Susannah Clark	8		Dartmouth Medical School	susannah.clark@hitchcock.org
Jordan Cloyd	25	32	Surgery	Jordan.Cloyd@ucsf.edu
Adam Collins	13		Anesthesia & Perioperative Care	CollinsA@anesthesia.ucsf.edu
Paul R. Conlin	12		Harvard Medical School	paul.conlin@va.gov
I. Darden	51		UCSF Fresno Medical Education Program	Ivy.Darden@fresno.ucsf.edu
Amanda del Rosario	44		UCSF Post-Baccalaureate Program	Amanda.delRosario@ucsf.edu
Amanda Doherty	22		Laboratory Medicine	Amanda.Doherty@ucsfmedctr.org
Jenny Espinoza	48		Medicine	Jenny.Espinoza@va.gov
Joan Etzell	22		Laboratory Medicine	EtzellJ@labmed2.ucsf.edu
Paula Fleisher	54		Family Practice-SFGH	pfleisher@fcm.ucsf.edu
C. Fletcher	52		UCSF Fresno Medical Education Program	Chantal.Fletcher@fresno.ucsf.edu
Audrey Foster-Barber	20		Neurology	fostera@neuropeds.ucsf.edu
Douglas Fredrick	23		Ophthalmology	FredrickD@vision.ucsf.edu
Akpene Gbegnon	43		Radiology	Akpene.Gbegnon@ucsf.edu
Stanton Glantz	43		Cardiology	glantz@medicine.ucsf.edu
Adrienne L. Green	34		Medical Center Administration	adrienne.green@ucsfmedctr.org

Jacob Gregerson	43				Medicine	Joseph.Gregerson@ucsf.edu
Helena Hart	26				Medical Student	Helena.Hart@ucsf.edu
Karen E. Hauer	9	10	11	24	Medicine	khauer@medicine.ucsf.edu
	34	48				
C Hendrickson	45				Student Affairs	Carolyn.Hendrickson@ucsf.edu
Duncan Henry	7				Medical Student	Duncan.Henry@ucsf.edu
Laura Hill-Sakurai	31	35			Family and Community Medicine	hillsakl@fcm.ucsf.edu
Daniel Holtzman	25				Medical Student	Daniel.Holtzman@ucsf.edu
Daniel Holtzman	32				Medical Student	Daniel.Holtzman@ucsf.edu
Susan Hughes	37	38			UCSF Fresno Medical Education Program	susan.hughes@fresno.ucsf.edu
Shepard Hurwitz	40				University of Virginia School of Medicine	shepard.hurwitz@Virginia.EDU
Susan Hyde	27				School of Dentistry	Susan.Hyde@ucsf.edu
Katherine M. Hyland	26	30			Biochemistry and Biophysics	khyland@biochem.ucsf.edu
David M. Irby	11				School of Medicine Dean's Office	irby@medsch.ucsf.edu
Isabelle Von Kohorn	50				Pediatrics	VonKohornI@peds.ucsf.edu
Rebecca Jackson	27				Obstetrics, Gynecology and Repro Sci	jacksonr@obgyn.ucsf.edu
Sharad Jain	39				Medicine	Sharad.Jain@ucsf.edu
U. Javed	52				UCSF Fresno Medical Education Program	Usman.Javed@fresno.ucsf.edu
David Joun	44				San Francisco State University	davejj40@sfsu.edu
Katherine A. Julian	28	29	53		Medicine	Kathy.Julian@ucsf.edu
Patricia Katz	36				Medicine	Patti.Katz@ucsf.edu
B. Price Kerfoot	12				Harvard Medical School	price.kerfoot@gmail.com
Kathleen M. Kerr	11				medicine	kkerr@medicine.ucsf.edu
A. Kinderman	29				Medicine	Anne.Kinderman@ucsf.edu
Anna King	42				Colby College Student	arking@colby.edu
Jeff Kohlwes	48				Medicine	jeffk@medicine.ucsf.edu
Marieke Kruidering-Hall	26	30			Cellular and Molecular Pharmacology	kruidering@cmp.ucsf.edu
Miriam Kuppermann	55				Obstetrics, Gynecology and Repro Sci	kuppermannm@obgyn.ucsf.edu
Cindy J. Lai	9	31	34	35	Medicine	clai@medicine.ucsf.edu,
	48					
Jasmine Lai	32				Medicine	Jasmine.Lai@ucsf.edu
Lee A. Learman	20	33	55		Obstetrics, Gynecology and Repro Sci	learmanl@obgyn.ucsf.edu
Christina Lee	35				Medical Student	Christina.Lee@ucsf.edu
Michelle Lin	13				Medicine - Emergency Svc	mllin@sfgghed.ucsf.edu
John Maa	35	43			Surgery	maaj@surgery.ucsf.edu
Teri Marsh	19					
Lindsay Mazotti	24	36			Medicine	Lindsay.Mazotti@ucsf.edu
Graham T. McMahon	12				Harvard Medical School	GMCMAHON@PARTNERS.ORG
Jessica Muller	19				Family and Community	mullerj@fcm.ucsf.edu

Nannett Nemenzo	46				Medicine Pediatrics Adolescent Medicine	nannette.nemenzo@ucsf.edu
Huy Ngo	44					Huy.Ngo@ucsf.edu
Bridget O'Brien	41				Carnegie Foundation for the Advancement of Teaching	obrien@carnegiefoundation.org
Patricia S. O'Sullivan	9	11	20	30	Medicine	patricia.osullivan@ucsf.edu
	33	46	47	53		
Joan O'Brien	23				Ophthalmology	ObrienJ@vision.ucsf.edu
Roberta Oka	27				School of Nursing	roberta.oka@nursing.ucsf.edu
Adriana Padilla	37	38			UCSF Fresno Medical Education Program	Adriana.Padilla@fresno.ucsf.edu
Joel Palefsky	27				Medicine	palefskyj@gcrc.ucsf.edu
Steven Z. Pantilat	8				Medicine	stevep@medicine.ucsf.edu
Christopher R. Peabody	39					
Michael W. Peterson, MD	51	52			UCSF Fresno	mpeterson@ucsfresno.edu
Erica Pham	39				University of California, Hastings School of Law	
Stephen Pinney	40				Orthopaedic Surgery	PinneyS@orthosurg.ucsf.edu
Laura Pliska	33				Obstetrics, Gynecology and Repro Sci	PliskaL@obgyn.ucsf.edu
Ann Poncelet	41	42			Neurology	ponce@itsa.ucsf.edu
Judith J. Prochaska	10	43			psychiatry	Jodi.Prochaska@ucsf.edu
Kathleen Puntillo	8				School of Nursing	kathleen.puntillo@nursing.ucsf.edu
Keir Reavie	49				UC Davis	
Susan Runyan	47				Family and Community Medicine	Susan.Runyan@ucsfmedctr.org
Nardine Saad	45				Student Affairs	Nardine.Saad@ucsf.edu
Amanda Sammann	25	32			Medical Student	Amanda.Sammann@ucsf.edu
Sandriijn van Schaik	46	50			Pediatrics	VanSchaikS@peds.ucsf.edu
George Sawaya	49				Obstetrics, Gynecology and Repro Sci	sawayag@obgyn.ucsf.edu
Varun Saxena	7				Student Affairs	Varun.Saxena@ucsf.edu
Adam Schickendanz	35				Medical Student	Adam.Schickendanz@ucsf.edu
Mary-Ann Shafer	46				Pediatrics	shaferm@peds.ucsf.edu
Shelley Diane	50				School of Nursing	Shelley.Diane@ucsfmedctr.org
William Shore	47				Family and Community Medicine	ShoreW@fcm.ucsf.edu
Rebecca Shunk	48				Medicine	rebecca.shunk@va.gov
Rachel Sobel	23					
Karen Sokal-Gutierrez	54				UCB-UCSF Joint Medical Program	
Kevin Souza	48				School of Medicine Dean's Office	souzak@medsch.ucsf.edu
Steven Stoltz, MD	52				UCSF Fresno	stoltz@ucsfresno.edu
Susan Stroud	13				University of Utah	
Jeff Tabas, MD	13				Medicine	jtabas@itsa.ucsf.edu
Justin Tan	32				Student Affairs	Justin.Tan@ucsf.edu
Josephine P.G. Tan	49				Medical Education	josephine.tan@library.ucsf.edu
Arianne Teherani	10	11	46		School of Medicine Dean's Office	Teherani@medsch.ucsf.edu

Frank Tendick	25	32			Surgery	frank.tendick@ucsf.edu
Lowell Tong	24	42			Psychiatry	lowellt@lppi.ucsf.edu
Kimberly S. Topp	30				Physical Therapy & Rehab Sci	ToppK@ptrehab.ucsf.edu
Thomas Trivison	12				Harvard Medical School	
Janet Tsui	13					Janet.Tsui@ucsf.edu
Margo H. Vener	7	17	47	53	Family and Community Medicine	mvener@fcm.ucsf.edu
Arpana Vidyarthi	36				Medicine	arpana@medicine.ucsf.edu
Natalia Volkova, MD	51	52			UCSF Fresno	nvolkova@ucsfresno.edu
Robert Wachter	36				Medicine	bobw@medicine.ucsf.edu
Arthur Wallace	14				Anesthesia	WallaceA@anesthesia.ucsf.edu
Maria A. Wamsley	47	53			Medicine	wamsley@itsa.ucsf.edu
Derek Ward	32				Medical Student	Derek.Ward@ucsf.edu
Justin Wilkinson	23				Student Affairs	Justin.Wilkinson@ucsf.edu
Elisabeth Wilson	17	54			Family and Community Medicine	ewilson@fcm.ucsf.edu
Naomi Wortis	47				Family and Community Medicine	Nwortis@sfgghcm.ucsf.edu
Harras Zaid	32				Medical Student	Harras.Zaid@ucsf.edu
Lee Zane	18				Dermatology	ZaneL@derm.ucsf.edu
Marya G. Zlatnik	55				Obstetrics, Gynecology and Repro Sci	zlatnikm@obgyn.ucsf.edu