Poster Presentations

Seventh Annual Davidoff Education Day
April 14, 2010

Education & Faculty Support Committee
Office of Educational Resources
## Medical Student Education

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Improving Medical Student Understanding of Palliative Care through Problem-Based Learning

Auxford Burks, M.D., Rachel J. Katz-Sidlow, M.D., Marlene McHugh, D.N.P., F.N.P./B.C., Pablo Joo, M.D., Karen Moody, M.D., M.S., and Kenneth Rivlin, M.D., Department of Pediatrics, Jacobi Medical Center and Montefiore Medical Center, and Department of Family and Social Medicine, Montefiore Medical Center, Albert Einstein College of Medicine

**Background:** Caring for dying children and their families requires competency in the treatment of the physical, psychological, social, and spiritual sources of distress. While medical students must learn these skills, there are few effective curricula. We recently integrated palliative care education into our third-year medical students’ problem-based learning (PBL) sessions.

**Objective:** To facilitate and assess medical student learning of four domains of palliative care: physical, psychological, spiritual, and social, through a PBL case-based format.

**Methods:** We modified a PBL case describing a limping child for use in teaching palliative care principles to third-year students. Initially, the medical students proposed possible etiologies for the child's complaint. They were then informed that the child had been diagnosed with an incurable cancer and were asked to develop an appropriate management plan. After the case discussion was completed, seven of the eight students volunteered to join a focus group to discuss their experiences.

**Results:** The students initially focused on the management of the child's pain. Subsequently, they expanded their thinking to include the psychological, social and spiritual components of care. They ultimately formulated a management plan that incorporated all four palliative care domains.

Several themes were highlighted: 1) the management discussion was “very frustrating” until they explored beyond the physical domain, 2) they were “very excited” to realize that they ultimately “got everything” and included all four domains, 3) they wanted to continue learning about palliative care issues and “build an experience base” in this area, and 4) learning palliative care principles “works in the PBL style.” Students also suggested that qualitative methods were superior to multiple-choice questions for evaluating their understanding of palliative care.

**Conclusions:** The PBL learning method may be an effective tool for teaching medical students about palliative care.
Professionalism Education During Third-Year Medical School: A National Study

Eric H. Green, M.D., M.Sc., Department of Medicine, Montefiore Medical Center, Albert Einstein College of Medicine

Background: Educating medical students about professionalism is important, and may best be done during the clinical years. Little is known about how third-year students are taught about professionalism.

Methods: We searched publicly available documents on the web sites of all licensed allopathic medical schools in the United States for descriptions of the third-year medical student curriculum. We abstracted any information available about professionalism education.

Results: We accessed a description of the third-year curriculum for 130/131 (99%) US medical schools. Documents accessed included admission brochures, curricular overviews, course catalogs, course descriptions, student handbooks, and curricular office web sites. We were able to access detailed information about schedule and course content for 80 schools (61%). 34 schools (26%) had dedicated courses that, based on their descriptions, included professionalism. These courses were constructed as stand-alone courses that met longitudinally during the third year at 14 schools (41%) with 10 of those courses (71%) meeting at least once/month. At 2 other schools (6%) professionalism was taught using embedded seminars within the core clerkships. At 8 (24%) schools, professionalism was taught as part of “intersessions,” and two schools (6%) use distance or online learning to teach professionalism.

Conclusion: At least 26% of US medical schools offer dedicated coursework that teaches about professionalism during the third year. These courses use different course structures.

Implications: Further research is needed to determine if there is an optimal way to teach about professionalism.
Students as Patients and Teachers: An Evaluation of an Experiential Emergency Contraception Project

Cara Herbitter, M.P.H., C.P.H., Jason Fletcher, Ph.D., Leslie Boden, M.S.U.P., Alice Fornari, Ed.D., R.D., and Marji Gold, M.D., Department of Family and Social Medicine, Montefiore Medical Center, Albert Einstein College of Medicine

Background and Goals: Emergency contraception pills (EC) are a safe and effective treatment to prevent pregnancy after unprotected sex. Despite improved over-the-counter access, several barriers to EC use remain: lack of patient or provider knowledge, barriers in the office or clinic system, and barriers at the pharmacy. Selected Einstein students participated in an experiential project designed to teach them about EC as part of their Family Medicine clerkship. This study describes students’ changes in knowledge and attitudes about barriers to care after assuming the patient role and presenting their findings to peers. Educational Goals: To increase students’ knowledge about the safety and efficacy of EC, so that they are more likely to educate their patients about EC and be general advocates for increased patient access to EC. To increase students’ understanding of the systems barriers patients face when trying to access medications, using EC as a paradigm.

Methods: A public health educator conducted seven 30-minute semi-structured interviews with groups of 2-3 students to assess their experiences of assuming the patient role and teaching their peers. A list of themes was developed, and the interviewer coded the data according to the themes. Overlapping themes were merged and four salient themes were identified.

Results: Students who participated in the EC Project reported multiple benefits: 1. Assuming the role of the patient, 2. Engaging in an experiential learning process, 3. Teaching their peers, and 4. Considering their future role as clinicians.

Conclusion: By assuming the role of the patient, students gained insight into what a patient might experience when trying to access EC. Further, students found that participating in an experiential learning process and sharing their findings with peers helped them retain and synthesize all they learned from the project. Finally, students noted that the lessons learned from the project would enhance their future practice and make them better patient advocates.

Implications: Our findings demonstrate that playing the role of a patient and teaching their peers are valuable learning experiences, and students can learn well during peer-taught sessions.
Professionalism in Medical Education: Assessing Whether Incoming Medical Students Recognize Professional Behavior

Amy E. Kesselman, M.D., Meghan Flanagan, M.S. IV, Lee A. Learman, M.D., Ph.D., Nadine T. Katz, M.D., Department of Obstetrics & Gynecology and Women’s Health, Montefiore Medical Center, Albert Einstein College of Medicine

Project Background: Professionalism among medical students has been the subject of significant research focus; however, whether incoming medical students recognize professional behavior has to our knowledge not been studied.

Goals: To assess whether incoming medical students recognize the seven domains of professional behavior as defined by the American Board of Internal Medicine (accountability, duty, integrity, honor, excellence, altruism and respect).

Methods: A descriptive study using 35 pre-clinical vignettes, which were pre-tested and refined via submission to academic physicians and fourth-year medical students. The sample size was 165 incoming students (90.2% of the 183 matriculating students completed the questionnaire). Results were analyzed using one and two sample T-tests, Pearson Chi Square and the McNemar tests. Survey responses were categorized on the basis of ability to correctly recognize behavior as professional or unprofessional.

Results: 23.8% of male and 8.6% of female students had difficulty recognizing professional behavior (the p value for the Pearson Chi Square test was 0.008). Of the 7 domains, the students had the most difficulty recognizing behavior exemplifying excellence and accountability. There was no correlation between the ability to recognize behavior as professional and previous career experience, age, race, religiosity, birth in the U.S. or abroad, disadvantaged background or with the student’s self-assessment of his or her level of professionalism compared to fellow students.

Conclusion and Implications: A significant minority of incoming medical students has difficulty recognizing professional and unprofessional behavior. These findings underscore the need for early identification and curricular intervention. A curriculum targeted to matriculating medical students regarding professional behavior should begin in the pre-clinical years.
The Human Dimensions of Illness: A Fourth-Year Elective in Literature and Medicine

Rosa Lee, M.D., Department of Medicine, Montefiore Medical Center, and Penny Grossman, Ed.D., M.P.H., Office of Educational Resources, Albert Einstein College of Medicine

**Background:** Programs in Humanities are increasingly being offered at medical schools. Humanities courses such as literature courses are potential tools to promote professionalism among medical students by enhancing communication skills and fostering empathy.

**Goals:** To introduce a Literature and Medicine elective to fourth-year medical students at Einstein

**Methods:** In March 2009, a one-month elective course entitled “The Human Dimensions of Illness: A Literature and Medicine Seminar” was offered to fourth-year medical students through the Department of Medicine. The course was offered to a maximum enrollment of 15 students. Students met twice weekly for two-hour sessions to discuss the texts. The course syllabus included novels, memoirs, poetry, and film. At the end of the course, students were asked to complete a course survey and participate in a focus group discussion.

**Results:** Fifteen students enrolled in the course. In the post-class survey (5-point Likert-like scale), students strongly agreed that they would recommend the course to other students (mean score 5) and that after participating in the course, they felt better able to empathize with patients who suffer from illness (mean 4.64). In the written portion of the course evaluation and focus group discussion, students commented on the relevance of the course material to their education and how the readings helped them to better understand the emotional impact of illness on a patient as well as to better see suffering from the patients’ point of view.

**Conclusion:** An elective in Literature and Medicine was well received by students. This preliminary evaluation of the course suggests that a literature course may effectively foster humanism. Future research is being planned to evaluate whether this course can enhance empathy among medical students.
Enhancing Palliative Care Education of Medical Students

Karen Moody, M.D., Marlene McHugh, F.N.P., Lisa Zelnick, M.D., Pablo Joo, M.D.,
Departments of Family and Social Medicine and Pediatrics, Montefiore Medical Center,
Albert Einstein College of Medicine

Background and Goals: Medical students are primarily trained in cure directed therapies. In contrast, the growing population of chronically ill adults and children with incurable disease in the U.S. requires future physicians to receive basic training in palliative care. Only 30% of U.S. medical schools have required courses and 19% have clinical rotations in palliative care. Approximately half of U.S. schools incorporate palliative care education into other coursework. According to the Association of American Medical Colleges Graduate Questionnaire, Einstein students who thought “the emphasis on palliative care was appropriate” increased from 38% to 82% over the past decade. Conversely, palliative care Einstein educators identified significant curricular gaps and lack of assessment.

Methods: In response, we created a palliative care education initiative applying Kern’s Six-Step Approach to Curriculum Development. We wrote measurable learning objectives for third year students based on national “Hospice and Palliative Medicine Competencies.” Educational interventions based on these objectives were incorporated into Pediatrics and Family Medicine core clerkships.

Results: The Family Medicine learning objectives were: 1. Describe fundamental palliative care principles, 2. List 5 components of palliative care review of systems, and 3. Describe 3 key components of assessing pain. To accomplish these objectives, students are given an hour interactive lecture, two reading articles, and a required patient interview using a palliative care assessment tool. Our Pediatrics objectives were 1. Define palliative care core concepts, 2. List the components of a total pain assessment, and 3. Describe the role of physician as instrument of healing. These objectives served as the basis of a two-part problem-based learning session.

Conclusions: Our assessments are directly linked to our objectives using Kirkpatrick’s hierarchy of program evaluation as a framework. We will measure student satisfaction, attitudes, and knowledge of palliative medicine. Future plans are underway to develop an Observed Clinical Skills Examination to measure student change in practice.

Implications: A medical school curriculum in Palliative Care can have teaching interventions and assessments linked to measurable objectives.
Development of an Assessment Rubric to Measure Community Health Objectives in a Family Medicine Clerkship

Jennifer M. Purcell, Ph.D., Gladys Valdivieso, Maria Teresa Santos, M.D., Pablo Joo, M.D.,
Department of Family and Social Medicine, Montefiore Medical Center, Albert Einstein College of Medicine

**Background and Goals:** Participation in a community project is a required component of the third-year clerkship in Family Medicine. The project provides students with an opportunity to define, analyze, and address a health problem within the local Bronx community. One component of the community project is a 15-minute collaborative presentation to students and faculty on the final day of the clerkship. Faculty members evaluate the presentations and these assessments are included in the students’ final clerkship grades.

A recent review of previous evaluation scores demonstrated poor inter-rater reliability among faculty ratings. This experience is not uncommon and has been documented in the assessment literature at multiple levels of education. As a result, we elected to create an assessment rubric. The use of rubrics is common in elementary and higher education, and is gaining momentum in professional education.

**Methods:** We utilized an instructional framework, used to develop similar measures in resident education, to measure desired outcomes. The revision process included identifying outcomes, identifying behaviors associated with learning, and writing behavioral descriptions. An eight-step iterative process is described.

**Results, Conclusions, and Implications:** This poster, a work in progress, provides a description of our department’s strategy to create a learner-centered assessment rubric for faculty global rating forms used to assess the community project and project presentation. We present challenges and resolutions to using the iterative technique. A pilot test of the rubric occurred in February and March and additional changes are being made. Once the form is complete, we expect to promote consistency in scoring, encourage self-assessment, and help students understand the relationship between objectives and outcomes.
Innovative Use of the Electronic Medical Record – Teaching Medical Students Complementary and Alternative Medicine

Raymond Teets, M.D., Andreas Cohrssen, M.D., and Jonathan Silberlicht, M.D., Beth Israel Medical Center, Albert Einstein College of Medicine

Project Background: The Beth Israel Residency, an Einstein training site run by the Institute of Family Health has been a national leader in Complementary and Alternative Medicine, (CAM) education. In 2004 the Institute installed an electronic medical record (EMR) system. While Einstein has a CAM curriculum, there was no EMR available yet.

Goal: Our goal was to provide the tools to effectively incorporate the knowledge gained from the established CAM learning approach in the traditional medical education utilizing innovative electronic formats

Method:
Teaching
a) Didactic – At the beginning of the rotation, an hour-long lecture goes through evidence regarding CAM and discusses a patient in a CAM context.

b) Use of CAM in the EMR – A medical student note that is preset in the EMR encourages the student to inquire about life-style, use of supplements and herbs. EMR “smart phrases” (macros) have easily accessible patient information on CAM modalities to be discussed with the patient, or printed out for educational purposes and reviewed with preceptors.

Evaluation
Learning Assessment Tool:
A pre- and post- assessment tool is administered at the beginning and the end of the 4-week rotation. The survey assesses the EMR methodology for learning and examines changes in the students’ attitudes about, and use of, CAM.

Results: So far 21 students participated in this project (still ongoing). In post-rotation surveys students appear to be more comfortable counseling on specific CAM modalities, namely probiotics, fish-oil, acupressure and relaxation techniques.

Conclusion: Teaching CAM modalities in combination between didactics and use of an EMR based CAM assessments and tools may increase students’ comfort with CAM counseling

Implications: If these findings are confirmed with a larger study, it may indicate a benefit to teachers of clinical medicine to work closely with program developers to integrate teaching content into the Electronic Medical Record.
Neonatal Simulation for Teaching Resuscitation Skills to Pediatric Residents

Robert Angert, M.D., and Lamia Soghier, M.D., Department of Pediatrics (Neonatology), Montefiore Medical Center, Albert Einstein College of Medicine

**Background:** Pediatric residents are trained in neonatal resuscitation at the beginning of their residency and then given a one-hour didactic presentation just prior to their neonatal intensive care unit (NICU) rotations. Skill levels are variable and competency is rarely assured by these methods. High-fidelity simulation and video debriefing has the advantage of exposing all trainees to a core set of emergency situations to test their knowledge and performance.

**Goal:** Use simulation to teach pediatric resident to recognize and treat newborn infants who are compromised at birth.

**Methods:** Neonatology staff members have attended advanced training sessions in medical simulation. We have developed a program for residents that replaced the one-hour didactic course with three simulation-based sessions per month followed by debriefing. Effectiveness has been measured via a validated resuscitation tool, anonymous survey and direct resident feedback.

**Results:** Overall impression of the simulation experience was positive. With increased experience based on level of training, residents requested scenarios of advancing complexity. First-year residents were able to remain in charge if senior residents were not present. Groups of senior residents were able to handle more complex scenarios. Evaluation of efficacy of training is in progress.

**Conclusion:** High-fidelity simulation is a valuable training tool for residents whose exposure to emergencies may be infrequent. Grouping residents by level of training effectively exposes them to situations appropriate for their abilities.

**Implication:** Training with high fidelity neonatal simulation prepares residents for real emergency situations. The next phase of this work will involve an assessment of code proficiency measured by a validated tool.
Resuscitating a Pregnant Patient: Use of Simulation to Compare Performance and Knowledge Among Maternal Fetal Medicine and Critical Care Medicine Fellows

Jyothshna Bayya, M.D., Department of Obstetrics & Gynecology and Women's Health, Montefiore Medical Center, Albert Einstein College of Medicine

**Background:** Our objective was to compare the performance of Critical Care Medicine (CCM) and Maternal Fetal Medicine (MFM) fellows in a simulated maternal cardiac arrest.

**Methods:** A multidisciplinary CCM and MFM team designed a maternal cardiac arrest scenario. After an introduction to the simulator (NOELLE, Gaumard Scientific) and the simulated environment, CCM (7) and MFM (6) fellows were individually presented with an unresponsive, pulseless full term pregnant patient. A standardized checklist was used for scoring. Critical Care Total median, Pregnancy Specific Total median and Knowledge Total median scores were used to compare performance and knowledge between the groups. The number of fellows appropriately completing each task was compared between the groups. Mann-Whitney, Chi Square, and Fisher’s exact tests were used as appropriate.

**Results:** In the Table below, we show the results for selected expected tasks observed. There were no significant differences in critical care or pregnancy specific median performance scores or knowledge scores between the MFM and CCM fellows. However, CCM fellows performed significantly better than MFM fellows in initiation of timely CPR. MFM fellows performed significantly better than CCM fellows in timely requesting help from the opposite team. [* p<0.05, Fisher’s Exact Test]. Trends were observed for differences in other tested variables (e.g. first and subsequent drug used, request for defibrillation) but small numbers limited our ability to draw firm conclusions.

**Conclusions:** Both groups proved to have adequate knowledge but it did not translate into appropriate management of a simulated maternal resuscitation. This attests to the value of simulation training for such events. In addition, simulation allowed for the identification of common weaknesses and specialty-specific areas for improvement for MFM and CCM fellows. This information will allow us to target education and interventions with the ultimate goal of improving the management of these rare, catastrophic cases.
### Comparison of Performance and Knowledge Between MFM and CCM Fellows

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<th>MFM n=6(%)</th>
<th>CCM n=7(%)</th>
<th>MFM n=6(%)</th>
<th>CCM n=7(%)</th>
<th>MFM n=6(%)</th>
<th>CCM n=7(%)</th>
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<tr>
<td>Code called</td>
<td>5(83)</td>
<td>7(100)</td>
<td>6(100)</td>
<td>2(26)</td>
<td>3(50)</td>
<td>5(71)</td>
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<tr>
<td>Apnea identified</td>
<td>5(83)</td>
<td>4(57)</td>
<td>1(17)</td>
<td>2(29)</td>
<td>5(83)</td>
<td>6(86)</td>
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<td>Assumed position at the head of the bed</td>
<td>1(17)</td>
<td>2(29)</td>
<td>0</td>
<td>0</td>
<td>4(67)</td>
<td>3(43)</td>
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<tr>
<td>O2 attached to BMV turned to full, Oral airway inserted correctly, Effective BMV seal achieved</td>
<td>0</td>
<td>0</td>
<td>4(67)</td>
<td>5(71)</td>
<td>4(67)</td>
<td>5(71)</td>
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<td>CPR initiated &lt;1 minute*</td>
<td>0</td>
<td>5(71)</td>
<td>3(50)</td>
<td>2(29)</td>
<td>4(67)</td>
<td>4(57)</td>
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<td>First drug used correctly</td>
<td>2(33)</td>
<td>5(71)</td>
<td>3(50)</td>
<td>2(29)</td>
<td>6(100)</td>
<td>5(71)</td>
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<tr>
<td>Defibrillator called for</td>
<td>3(50)</td>
<td>5(71)</td>
<td>4(67)</td>
<td>2(29)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Median score (IQR), max=15</td>
<td>5(3-5)</td>
<td>7(4-9)</td>
<td>3(2-4)</td>
<td>3(2-3)</td>
<td>6(4-6)</td>
<td>5(4-7)</td>
</tr>
<tr>
<td><strong>Pregnancy Specific Checklist</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Call for Opposite team within 1 minute*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Uterine displacement used</td>
<td>1(17)</td>
<td>2(29)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Continuous cricoid pressure performed, Chest Compressions higher, Fetal monitors removed before shock</td>
<td>0</td>
<td>0</td>
<td>4(67)</td>
<td>5(71)</td>
<td>4(67)</td>
<td>5(71)</td>
</tr>
<tr>
<td>Femoral access not used</td>
<td></td>
<td></td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Smaller ETT size used</td>
<td></td>
<td></td>
<td>0</td>
<td>1(14)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CD at 4-5min</td>
<td></td>
<td></td>
<td>3(50)</td>
<td>2(29)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ETT size</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3(50)</td>
<td>4(57)</td>
</tr>
<tr>
<td>Median Score (IQR), max=11</td>
<td>3(2-4)</td>
<td>3(2-3)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Knowledge Checklist</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maternal code positioning</td>
<td>3(50)</td>
<td>5(71)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reason for positioning</td>
<td></td>
<td></td>
<td>5(83)</td>
<td>6(86)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Use of cricoid pressure</td>
<td></td>
<td></td>
<td>4(67)</td>
<td>3(43)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chest compression location</td>
<td></td>
<td></td>
<td>4(67)</td>
<td>5(71)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Removing fetal monitors before shock</td>
<td></td>
<td></td>
<td>4(67)</td>
<td>4(57)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CD at 4-5 min</td>
<td></td>
<td></td>
<td>6(100)</td>
<td>5(71)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Median Score (IQR), max=9</td>
<td>6(4-6)</td>
<td>5(4-7)</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>
Teaching Operative Vaginal Delivery Skills to Obstetrics and Gynecology Residents Using Simulation

Jyothshna Bayya, M.D., Department of Obstetrics & Gynecology and Women's Health, Montefiore Medical Center, Albert Einstein College of Medicine

Background: Our objective was to assess the performance of obstetrics/gynecology residents participating in simulated vacuum assisted vaginal delivery and to conduct postsimulation debriefing. Our next step is to repeat the simulated vacuum delivery to assess for improvement.

Methods: Thirty-five residents were randomly assigned to two simulated Vacuum assisted vaginal delivery stations (Group 1: N=15; Group 2: N=20). Six evaluators (4 MFM attendings, 1 MFM fellow and 1 Obstetrics/gynecology attending) were divided into 2 teams and assigned to the two stations. A standardized scenario of a term multiparous patient, fully dilated with fetal heart decelerations was presented to the resident that required prompt intervention. Evaluators took turns following residents through the simulation, scoring performance using a standardized checklist (maximum score of 11), administering a multiple choice knowledge test and debriefing. Kruskal-Wallis and Mann Whitney tests were used for statistical analysis.

Results: Median (IQR) score was significantly better for PGY4 residents compared to the others (P=0.002) (See table). Two thirds of the PGY 4s performed above the overall median score of 6 (IQR 5-7.5) while more than two thirds of PGY 2s and PGY 3s and all PGY1s performed below the median score (P=0.011). There was no significant difference between scores given at the two stations.

Conclusions: During vacuum assisted simulated delivery, fourth year residents demonstrated significantly better overall performance compared to their juniors. Yet, among the PGY4s, performance was suboptimal in some key elements. Simulated vacuum assisted vaginal delivery and individual debriefing intervention offer excellent opportunities for junior residents to learn and practice this technique while also providing the more senior residents a chance to enhance their skills. We plan to repeat the vacuum vaginal delivery simulation for all residents.

Table: Comparison of Performance (residents completing each task) of Vacuum Delivery between PGY levels

<table>
<thead>
<tr>
<th></th>
<th>PGY 1 N=10</th>
<th>PGY 2 N=9</th>
<th>PGY 3 N=7</th>
<th>PGY 4 N=9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pelvic exam: station, position</td>
<td>6</td>
<td>8</td>
<td>7</td>
<td>9</td>
</tr>
<tr>
<td>EFW</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Talks to the Patient and Explains</td>
<td>6</td>
<td>7</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>Empties bladder</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Calls for Vacuum</td>
<td>9</td>
<td>8</td>
<td>7</td>
<td>9</td>
</tr>
<tr>
<td>Notifies Ob Attending</td>
<td>4</td>
<td>4</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Notifies Pediatrics</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Checks for Maternal soft tissue entrapment after applying Vacuum</td>
<td>2</td>
<td>6</td>
<td>5</td>
<td>8</td>
</tr>
<tr>
<td>Pumps up the vacuum to the green zone</td>
<td>3</td>
<td>1</td>
<td>6</td>
<td>9</td>
</tr>
<tr>
<td>Steady traction with no rocking movements</td>
<td>6</td>
<td>7</td>
<td>6</td>
<td>9</td>
</tr>
<tr>
<td>Gives traction with one hand during contraction, while placing the other hand on the cup to prevent detachment and to check for descent</td>
<td>3</td>
<td>6</td>
<td>6</td>
<td>8</td>
</tr>
<tr>
<td>Total median score</td>
<td>4.5</td>
<td>7</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>IQR for total score</td>
<td>2.00-5.00</td>
<td>3.5-9.00</td>
<td>7.00-7.00</td>
<td>7.00-8.00</td>
</tr>
</tbody>
</table>
Implementation of a Wiki-Based Education and Resource Tool in a Primary Care Residency Program

Uriel Felsen, M.D., Angela Jeffers, M.A., Rachel Stark, M.D., M.P.H., and Hillary Kunins, M.D., M.P.H., M.S., Department of Medicine, Montefiore Medical Center, Albert Einstein College of Medicine

Background and Goals: The Primary Care and Social Internal Medicine (PCSM) Residency Program at Albert Einstein College of Medicine/Montefiore Medical Center in the Bronx, NY, aims to provide an innovative, patient-based and learner-centered primary care training program to prepare trainees to care for marginalized and underserved populations. The volume and logistics of disseminating educational materials and coordinating the curriculum poses challenges that compromise the quality of learning for residents. To establish a centralized site for dissemination and management of educational resources and coordinate delivery of the curriculum, the PCSM program has implemented a wiki-based education and resource tool.

Methods: To test potential feasibility and effectiveness, we piloted a wiki for a seminar series on health and human rights. Using the free wiki resource, PBworks, we posted all seminar materials including schedule, readings, discussion questions, and session updates online. Residents shared answers to discussion questions in the collaborative environment of the wiki. Due to the success of the course wiki, we launched a program-wide wiki. In addition to materials for didactic sessions, this wiki contains resources for ambulatory practice and education, an archive of clinical questions critically appraised by residents, and monthly outpatient schedules updated in real-time with Google Calendar.

Results: Following three months of implementation, a written evaluation was given to the 20 residents who had used the wikis. Preliminary evaluation data shows that residents find the wiki to be “convenient,” and “reliable.” Additional comments include, “Saves paper and easy to access,” “Access to an accurate, up to date calendar is great,” and, “A great and useful addition to the program.”

Implications: The PCSM Residency Program has successfully implemented both a course specific and program-wide wiki. Based on preliminary data, we believe the wiki can be an effective resource in medical education and warrants further use and expansion.
Optimal Training for Eclampsia Management: Simulation or Traditional Lecture?

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Background and Goals: To compare eclampsia management skills among residents randomized to traditional lecture or simulation-based education.

Methods: Residents (n=38) were stratified by year and randomly assigned to three groups: SLS (simulation→lecture→simulation), SS (simulation→simulation), LS (lecture→simulation). Eclampsia simulations were scored based on standardized checklists. By study design no simulation baseline was performed for LS group, therefore pooled peer median baseline simulation scores were used for LS analyses. Maternal (recognition, assessment and seizure management), fetal (assessment and delivery plan) and total eclampsia scores were given. Mann-Whitney U or Wilcoxon rank sum tests were used as appropriate.

Results: Post-education simulation scores reflected statistically significant improvement for all groups. However, maternal and eclampsia overall management scores were significantly better in SLS and SS compared to LS. (Table). Combination of simulation and lecture in SLS group did not lead to incremental benefit when comparing post-education eclampsia scores between SLS and SS (19 vs 19, p=NS). During baseline simulations there were 40 potentially harmful actions performed (e.g. intravenous injection of undiluted MgSO4, medication overdose, CD for unstable mother). This number was improved by 75% during post-education simulations.

Conclusions and Implications: Simulation training is superior to traditional lecture for teaching crucial skills to manage eclampsia, a life-threatening obstetric emergency.
Identifying Gaps in Internal Medicine Residents’ Confidence and Knowledge of Chronic Pain Management

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Background: Up to one third of primary care patients experience chronic pain. However, internal medicine residents lack training and confidence in chronic pain management.

Goals: To develop a curriculum for internal medicine residents in management of chronic non-malignant pain identifying and targeting areas of greatest need.

Methods: We distributed a web-based questionnaire via email to 151 internal medicine residents in the Bronx, NY. Questions addressed confidence and knowledge about specific components of diagnosis and treatment of chronic pain. For confidence questions, we report the proportion of residents agreeing or strongly agreeing with feeling confident on each item. For knowledge questions, we report the proportion of respondents selecting correct multiple choice or true-false response options.

Results: Of 151 internal medicine residents contacted, 96 (64%) completed the questionnaire. Only 14% reported feeling confident managing chronic non-malignant pain. Very few residents reported confidence performing therapeutic injections of the knee (9%). Most felt confident prescribing NSAIDs (96%), gabapentin (68%), and short-acting opioids (63%), but fewer reported confidence prescribing long-acting opioids (42%). A minority of residents reported confidence in identifying opioid analgesic misuse (47%) or negotiating pain contracts (33%), but more were confident in interpreting urine drug tests (72%). Knowledge scores were lowest in interpretation of urine drug tests and treatment of neuropathic pain; respectively, only 1% and 7% of residents correctly answered two questions in these areas.

Conclusion: This study demonstrates that internal medicine residents lack confidence in managing chronic non-malignant pain. We identified several areas of need for focused training: (1) prescribing long-acting opioid analgesics, including monitoring strategies such as treatment agreements and urine drug testing; (2) use of therapeutic joint injections; and (3) pharmacotherapy for neuropathic pain.

Implications: These results have guided development of a comprehensive pain management curriculum for primary care residents, including didactic presentations, skills practice sessions, and clinical experiences.
Development of Web-Based, Interactive, Socratic-Style Case Studies to Enhance Resident Education

Graeme Frank, M.D., Department of Pediatrics, Steven & Alexandra Cohen Children’s Medical Center of New York, North Shore-Long Island Jewish Health System, Albert Einstein College of Medicine

Background: Resident work hour restrictions have created challenges to effective resident education. The traditional model of resident teaching in the hospital through instruction at the bedside and formal didactics lectures has become less feasible.

Objective: The goal of this project was to create an interactive, web-based, learning tool that utilized the Socratic method of engagement to assess and improve knowledge of residents.

Methods:
1. Clinical cases were created in Microsoft PowerPoint. Each case had several question interspersed throughout the case, modeled on the Socratic method utilized on traditional teaching rounds. The questions were multiple-choice questions or required a typed response.
2. Each question was followed by a discussion/rationale for the correct answer.
3. Utilizing the Camtasia Studio PowerPoint Add-in and a microphone, each case, including questions and discussions, was recorded by the case creator. The cases were then produced in Macromedia Flash (SWF), converting the presentation into a web-friendly, interactive experience.
4. The cases were posted on a Resident Resource Page on the Children’s Medical Center website.
5. When taking a case, the user (resident) is asked to provide his/her name and PGY level. The audiovisual cases require active participation in that each student must answer each question before the presentation will progress. At the conclusion of the presentation, the program provides a grade for the multiple-choice questions, and the student is given the opportunity to provide feedback.
6. With the click of a button, an email (containing the resident’s responses, score and feedback) is automatically generated that is sent to the case creator.

Results: This model of enhanced resident education has been enthusiastically adopted by the pediatric residents and the feedback has been overwhelmingly positive.

Conclusions: We have developed web-based, interactive, Socratic-style case studies that can be used as both an assessment and learning tool.
The Effect of Electronic Health Records on Resident Education in Beth Israel’s Outpatient Primary Care Practice

Glenn Kashan, M.D., and Faraj Faour, M.D., Department of Medicine, Beth Israel Medical Center, Albert Einstein College of Medicine

**Educational Goal:** Assess whether the introduction of electronic health records (EHR) into an academic outpatient practice would increase proper documentation and compliance with best practices, key skills to be instilled during resident education.

**Description:** The project was set in General Medical Associates, where 102 resident physicians maintain continuity clinic. We aimed to assess the impact of EHR on JCAHO compliance, efficiency, and care improvements such as continuity of care, preventative care, and medication reconciliation.

**Methods:** We performed a retrospective chart review comparing EHR with paper records for patient education, preventative screening rates, continuity of care, and medication reconciliation. An online survey was also conducted to gauge the residents’ perceptions about this change and how it impacted their educational experience at the clinic.

**Results:** Forty-two physicians participated in the survey. Greater than 70% of respondents reported the EHR was easy to learn and decreased time spent per visit. Most respondent also reported that it improved patient safety, specifically continuity and quality of care, medication reconciliation, and promotion of preventative care as compared with the paper records system.

The chart review encompassed 72 electronic and 73 paper records. By changing to the use of EHR, there was no significant change in the percentage of notes that were timed, dated, and signed. There was a 42% improvement in patient education documentation, and a 10% improvement in pain score, allergy & problem list documentation. There was an 8% increase in preventative care documentation and a 30% improvement in clear documentation of medication reconciliation. However, a 16% increase in use of prohibited abbreviations and an 8% decrease in continuity were noted with EHR compared with paper.

**Conclusion:** The introduction of EHR resulted in major improvements in the delivery of care. However, challenges remain in decreasing the use of prohibited abbreviations and improving continuity of care.
Use of a Two-Dimensional Visual Scale for Tracking Performance Progress and Independence in an Orthopaedic Surgery Residency Program

I. Martin Levy, M.D., Department of Surgery (Orthopaedics), Einstein/Montefiore Medical Center, and Michael J. Reichgott, M.D., Ph.D., Office of Graduate Medical Education, Albert Einstein College of Medicine

Background: A goal of the ACGME competencies is to enable physician-teachers to define, and learners to understand, the criteria necessary to become successful, independent practitioners. Numerous, criterion-based grading forms have been developed, but they do not fully describe an individual learner’s position in, and progress through, the learning landscape. In the end, an appropriate relationship must exist between a learner’s confidence and their integration of knowledge. The visual analogue scale (VAS) has been used successfully to measure subjective phenomena. In its most common form, a subject uses a linear scale, anchored at both ends by discrete values to describe a subjective sensation. Most often the scale is one-dimensional.

Objective: We have modified the VAS to simultaneously track two subjective phenomena: Confidence and Knowledge Integration. This combined scale (the CK Index) graphically correlates the relationship between these factors and designates a “success criterion” we term the “Independence Threshold.”

Method: The CK Index is being used by faculty to evaluate resident performance of operative procedures, performance during individual rotations, and overall performance. One form is used for each performance evaluation. For each event, the resident’s “knowledge integration” (actual) is estimated and marked along the x-axis. The expected performance is then marked on the x-axis. An individual’s confidence is then determined as “appropriate for level”, “above level” (+SEI), or “below level” (-SEI). The expected and actual knowledge integration values are then projected to the appropriate curve and the curve is then marked and dated.

Significance: We have found that a two-dimensional visual scale enables our faculty-educators to accurately depict the progress of learners for a single event, series of events or entire courses of study. The ultimate value of the CK Index will be its potential ability to visually depict safety upon independence.
Improving Patient Safety by Implementing a Good Catch Reporting Culture

Rebekah Lipstein, M.D., Madalsa Patel, M.D., Jeffrey C. Gershel, M.D., Kenneth Rivlin, M.D., Department of Pediatrics, Jacobi Medical Center, Albert Einstein College of Medicine

Background: One of the greatest obstacles to improving patient safety is the tradition of viewing medical errors as the result of individual failings. As a result, opportunities are missed to improve systems and prevent future harm. As front line healthcare providers, residents witness potential medical errors in their day-to-day activities. However, very few are reported.

Objective: To improve patient safety by developing and implementing a Good Catch reporting culture among pediatric residents.

Methods: As part of a patient safety performance improvement project, our residents were asked to seek out and report potential and actual medical errors. In our hospital these events are called Good Catches and require the completion of an anonymous, confidential form. All such reports completed by the pediatric house staff were then submitted to the chief residents. The residents were assured that the hospital operates as a just culture and that individual blame would not be assigned to anyone guilty of making an error.

Results: During the year prior to initiating this project, three Good Catch reports originated from the pediatric house staff. Over the first six months of the project, 25 reports were submitted, all of which originated from the emergency department and inpatient services. Only one of the 25 Good Catches resulted in potential harm to a patient; all of the others were classified as near misses. The types of errors reported included:

- Misdiagnosis/Poor Judgment: 9
- Communication (between units): 5
- Communication (between staff): 3
- Medication: 3
- Administrative: 3
- Medical Procedure: 2

Conclusions: Pediatric residents are much more likely to report potential medical errors when they are comfortable that the goal is improved patient safety and not assigning individual blame. Maintaining a just culture enables the development of a reporting culture.
A Community-Based Partnership for Residency Education in Obesity and Nutrition

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**Background and Goals:** The obesity epidemic in the United States is disproportionately prevalent in indigent communities, where access to healthy food is problematic. For resident physicians to become effective in reducing this health disparity, they must develop culturally competent knowledge and skills to address obesity and nutrition.

**Objective 1:** To develop a partnership between a community organization, the South Bronx Food Cooperative, and the Comprehensive Health Care Center (CHCC), our primary care residency program’s ambulatory care training site.

**Objective 2:** To improve residents’ ability to manage obesity and improve nutrition by addressing ACGME core competencies of medical knowledge, patient care, and systems-based practice.

**Methods:** In partnership with the South Bronx Food Cooperative, we have developed an elective nutrition “track.” This track is held in lieu of three clinical sessions during ambulatory care rotations. Sessions include receiving lectures by CHCC’s nutritionist, developing and conducting health education classes at the co-op, attending the monthly co-op members meeting, and working a 3-hour co-op shift. Residents learn about food-buying patterns and observe a functioning community-based organization, which augments understanding of the social context of nutrition and helps develop systems-based practice. Faculty debrief with residents each month to highlight practice relevance and evaluate progress towards goals.

**Results:** Six of the 20 eligible residents have elected to participate in the track. Since its inception in the fall of 2009, they have participated in monthly co-op meetings, worked 1-2 co-op shifts, and led three health education sessions.

**Conclusions:** The development of a partnership between a primary care residency program and a community-based organization is feasible, and can support a local effort to improve access to healthy food while fulfilling a need to train residents in nutrition and obesity.
The Effect of Residents Observing the Clinical Work of Their Faculty

Deborah Swiderski, M.D., and Lawrence Dyche, A.C.S.W., Departments of Medicine and Family and Social Medicine, Montefiore Medical Center, Albert Einstein College of Medicine

Background and Goals: The “art of medicine” refers to qualitative aspects of effective medical practice that include tacit understanding, the effect of physician feelings and the management of uncertainty. These skills require role modeling, but standard teaching methods rarely allow learners access to their instructors’ internal cognitive and emotional processes related to the care of patients. The Social Internal Medicine and Primary Care faculty at Montefiore have undertaken a novel educational strategy to bridge this gap. In this approach, senior faculty members present videotapes of their own challenging patient encounters to resident trainees for discussion and consultation. The exercise is conducted in groups of 4-8 PGY IIs and IIIs, and is facilitated by a behavioral science faculty member who encourages challenging questions. Our goals are to provide a context where residents will be able (1) to articulate complex questions and discuss emotion-laden issues (2) and to learn by seeing experienced clinicians in actual practice.

Methods: This educational approach is being evaluated through qualitative study of the trainees’ experience of the exercise. Immediately following each video review session, faculty members leave the room and a research assistant audiotapes a discussion in focus group format to elicit participants’ thoughts, feelings and learning. The tapes are transcribed to protect the anonymity of discussion participants, and then analyzed by research faculty using a grounded theory approach. This poster will present the analysis of the first 4 sessions of this ongoing study.

Results: Qualitative analysis of the transcriptions of the first four of these teaching exercises yielded four themes that residents discussed after the viewing. (1) There was a novel leveling of the playing field between attendings and residents. (2) There was benefit to seeing their instructors applying precepts in their own real world practice. (3) It was refreshing to hear about the emotions their instructors experience in their own practice. (4) Seeing several instructors work allowed them to perceive the effect of physician identity and style.

Conclusions: Analysis of the data indicates that this novel approach allows residents to observe firsthand how faculty build relationships with patients, negotiate clinical uncertainty, accept imperfection, and deal with the competing demands of patient care.

Implications: This instructional approach is providing an important learning experience for residents and is deserving of further use and assessment.
Advanced Trauma Operative Management (A.T.O.M.) Course

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Introduction: The amount of trauma, particularly penetrating trauma, has decreased over the past few decades, leading to a training dilemma for surgical residency programs: how does one adequately train residents in operative trauma such that they will graduate competent in the management of these patients?

Methods: The Advanced Trauma Operative Management (ATOM) course is a newly established American College of Surgeons simulation course for the training of senior (PGY 4 & 5) residents in the operative management of trauma patients. We became the first and only New York state course center in 2007. The course provides a half day of lectures and a half day of OR simulation with a swine model. The OR simulation portion consists of five surgical scenarios with increasing hemodynamic instability and is a one-on-one teaching model.

Results: To date we have trained 56 surgical residents from around New York City. Nearly half of the residents are from our own surgical residency program. Since starting the course we have trained all of our senior residents. All residents who have taken the course have shown a statistically significant (p<0.001) improvement both in knowledge and confidence, as demonstrated by online pre and post course tests. The residents demonstrated a mean increase in their test scores of 16 percentage points and an increase in their confidence level of 32 percentage points. These results are consistent with initial data from the course development.

Conclusion: Simulation courses can increase both knowledge and self-confidence of residents. These courses are an excellent way to teach residents about uncommon or increasingly less common situations, preparing them to respond in a comprehensive and effective manner in the future.
Do Early and Late Responders to Online Evaluations Differ in Their Perceptions of Medical School Courses and Clerkships?


Objectives: Our study examined if differences exist in the quantitative and qualitative information collected from early and late responders to online course and clerkship evaluations.

Methods: Evaluation data collected during the past four complete academic years were included in the study. All 7 of the required clerkships (i.e., Medicine, Pediatrics, Psychiatry, Obstetrics/Gynecology, Surgery, Family Medicine, and Neurology), and 22 first- and second-year basic science courses, were evaluated by medical students using online forms. Each course evaluation form included a standard question asking students to rate the course overall. Students who completed their online course evaluations within one week were defined as early responders; students who completed their evaluations more than one week after it was assigned were defined as late responders.

All clerkship evaluations were collected using a standard form containing 23 Likert-type items, aggregated into four subscales: organization/orientation (4 items), teaching/teachers (13 items), evaluation/feedback (4 items), and global assessment (2 items). Students were defined as early responders, middle responders, and late responders. All course and clerkship evaluation forms included two boxes for typing in open-ended comments, one each regarding the perceived strengths and weaknesses of the course or clerkship.

Results: Early and late responders did not differ in their rating of the course overall, and early, middle, and late responders did not differ in any of the four subscale scores derived from the evaluation forms. For qualitative data, early, middle, and late responders were equally likely to make comments about both clerkship strengths and weaknesses. Early and late responders did not differ on the average length of their comments.

Conclusions: The findings of this study indicate that the risk of achieving a less than ideal response rate may be less serious than expected. Specifically, the lack of major differences in the data provided by early and late responders suggests that interpretations based on that data would be approximately the same if the evaluation were taken down one week after the course or clerkship ended or remained up for an extended period of time.
Work In Progress: A Moral Development-Based Bioethics Curriculum for the Albert Einstein College of Medicine

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Background: Society expects physicians to behave in an ethical and professional manner. Yet society is fraught with ethical dilemmas. Revolutionary advances in technology, the demise of paternalism in favor of a shared decision making model, and radical changes in the health care delivery system all contribute to the complex moral environment in which physicians currently practice medicine. For these reasons, learning how to identify and analyze ethical problems is just as critical for medical students as is mastery of the basic sciences. Yet currently, medical schools require an average of only 36 hours of bioethics education over four years--about one per cent of more than 3,500 hours of time devoted to teaching overall.

Goal: The goal of this project was to design a bioethics curriculum for medical students that would:
1. Enable students to anticipate and identify ethical dilemmas in clinical encounters
2. Help students develop moral reasoning skills so that they can work through ethical dilemmas in a sensitive and analytical manner
3. Identify and analyze ethical issues associated with the information students are learning in their basic science courses

Method: A literature review on moral development was performed in order to select a model to serve as the framework for the curriculum. Relevant information about Einstein’s current curriculum was obtained through interviews and syllabus reviews. Responses to bioethics-related questions on the AAMC Annual Graduation Questionnaire identified curricular gaps. Unique features and best practices used in bioethics teaching at other institutions were discovered through a website benchmarking process. A four-year program with ethics as a longitudinal theme, aligned with basic science course content, was designed and piloted in the 2009-10 academic year, with the Classes of 2012 and 2013. The program was based on Rest’s Four Component model of moral development.

Evaluation: Student feedback was obtained. Strategies for full implementation are discussed.
Integrative Medicine in Residency: An Innovative Curriculum Model

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Background/Goals: The purpose of the Integrative Medicine in Residency program (IMR) is to design, implement, and evaluate a 200-hour online competency-based curriculum in Integrative Medicine incorporated throughout the 3 years of Family Medicine residency. It is currently being implemented at 8 residencies nationwide. This poster will summarize the methods used in developing the IMR, as well as emerging evaluation findings.

Methods: Formative evaluation methods include: preliminary needs assessment¹; developmental evaluation of the curriculum and online technology during design and piloting; process evaluation of the curriculum and its implementation. Summative evaluation methods include: competency-based outcomes evaluation of resident learning using a quasi-experimental, longitudinal design; and, evaluation of the impact of the IMR on resident ranking decisions (post Match).

Results: In Year 1, the first cohort (n=65) began the program (2011 class); 53% felt that the IMR was very important/important in their residency ranking decisions at Match and 88% reflected high/moderate interest in learning integrative medicine during residency. The mean of all courses completed was 92.6%, and the mean completion time for 1st year courses was 16 hrs 50 min. Resident ratings on Clinical Utility of courses was high as was functionality of the online technology. At baseline, the mean percent of correct Medical Knowledge answers was 50.7%, with significant differences for females and U.S. graduates. Residents improved in correct answers on the Medical Knowledge test by 16% from baseline to the first repeated measure (p= <.001). Direct observation ratings of Clinical Skills showed deficits on dimensions of integrative history taking, integrative treatment planning, and patient counseling.

Conclusions/Implications: The IMR provides a new model for graduate medical education, which combines evidence-based conventional and complementary approaches and offers potential for attracting new residents. Residents show gain in medical knowledge and skills, and rate the curriculum highly. Successful implementation and evaluation of the IMR in the pilot sites will facilitate expansion to other primary care residencies.

References
Incorporation of Team-Based Learning in Emergency Medicine Residency Training

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Educational Goal: To introduce Team-Based Learning (TBL) as an alternative to didactic lectures in an emergency medicine (EM) residency program.

Background: The ACGME requires 5 hours per week of regularly scheduled didactic conferences for EM. Many undergraduate and graduate schools have shifted to small group learning, case based instruction and in some institutions TBL but residency programs for the most part have not.

Methods: The EM Residency Program at LIJ is fully accredited with 47 residents. In selected sessions TBL sessions were implemented during scheduled didactics. Prior to the session residents were assigned reading assignments and a case related to the topic. At the beginning of the TBL session the residents were divided randomly into groups of 5-6 so that each group consisted of an equal number of senior and junior residents. The case was presented followed by an Individual Readiness Assurance Test (IRAT) based on the assigned readings. After the IRAT, the same test was administered to the teams (GRAT) and the teams simultaneously displayed their answers using lettered cards. Discussion and misunderstanding of content or error in reasoning were resolved. If all teams displayed the same answer, the instructor added a pearl or raised a question to stimulate discussion. The groups then discussed the case and presented and defended their final diagnosis. Preliminary satisfaction data was collected from the residents. The scale had 6 criteria that were scored from strongly disagree (1) to strongly agree (5). Comments from residents included “loved it,” and “every lecture should be TBL.”

Results (n=40)

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<thead>
<tr>
<th>Understanding</th>
<th>Challenged</th>
<th>Engaged</th>
<th>Peer Contribution</th>
<th>Productive</th>
<th>Enjoyable</th>
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Conclusion: TBL was successfully implemented into our resident conference. We plan to formally study the learning by residents and continued effectiveness of TBL in our EM curriculum comparing traditional didactic and TBL format.
The Use of Team-Based Learning Strategies Combined with Simulation in Medical Education

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**Background:** For several years, we had Family Medicine residents and medical students participating in weekly scenarios (simulation) using PC-based interactive, digitally enhanced mannequins and at times live actors. The object was to promote learning in an environment without risk to real patients while allowing time for self-reflection via debriefing sessions. After debriefing (via playback of the videotaped scenario), a formal PowerPoint presentation was given by the instructor and then the participants were allowed to repeat the scenario. Over time we have evolved, and the scenario (patient interaction), which used to be individual based, is now team based. Recently, we have incorporated Team-Based Learning (TBL) into the sessions. This has allowed greater participation by the residents and students with greater enthusiasm for the sessions.

**Description:** The course consists of a pre-class reading of a topic, an individual readiness assurance test when they come to class followed by a group readiness assurance test. The TBL activity is then facilitated after which the teams take turns applying their knowledge in the scenario (patient interaction). Upon completion of the scenarios, the teams reconvene for debriefing, reflection (they watch themselves from the video) and further discussion of the topic.

**Evaluation:** Fifty-five residents and 50 students participated. At the end of each session participants completed an evaluation form. A Classroom Engagement Survey has been distributed to the participants with four subscales: Learner Participation, Learner Enjoyment of Class, Patient Safety Elements and Team Work Awareness.

Analyses are currently ongoing comparing the difference in rating between the simulation sessions alone versus the simulation combined with TBL sessions. Anecdotally, the preliminary evaluations from the participants in the simulation combined with TBL sessions have been more positive than those of simulation alone.

**Conclusion:** Of the two methods, students responded best to simulation combined with TBL, adding to the list of methods for teaching clinical topics to residents and medical students.
Evaluating Knowledge Improvement after a Midwife Training Program in Ethiopia

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Objective: The United Nation’s development goals include decreasing the maternal mortality ratio (MMR) by three quarters. Approximately 8% of maternal deaths in 2000 were due to obstructed labor. In a large prospective trial, the World Health Organization (WHO) showed that partograph use during labor management significantly reduces prolonged labor, reduces intrapartum stillbirth, and improves perinatal outcomes. Recently we found that the partograph is rarely used at 14 health centers in the Kembata-Tembaro Zone (KTZ) of Southern Ethiopia, which serve approximately 425,000 rural women. Therefore, we piloted an education program training midwives in the use of the WHO partograph, and identification of labor emergencies. Our objective was to evaluate whether training improved understanding of the use of the partograph and labor emergencies.

Study Design: We conducted a prospective study using pre- and post-education exams administered to all midwife attendees of a training program focused on partograph use and labor emergencies. Exams included the completion of a partograph as well as questions related to labor management and obstetric emergency. Exams were scored by a single physician. Scores were analyzed using paired Student t-test.

Results: 12 of 45 KTZ midwives attended the training and completed pre- and post-tests. Significant improvement was seen in all areas examined. Training improved understanding of the WHO partograph by 25.3% (38.0% v. 63.3%; p=0.0002). A 22.7% improvement was noted on labor/emergency questions (51.1% v. 73.8%; p=0.002). Overall scores revealed 24.2% improvement (43.3% v. 67.5%; p=0.0001).

Conclusion: The WHO partograph is a valuable tool to reduce obstructed labor and thereby the MMR in Ethiopia. Results revealed that baseline partograph understanding was inadequate. Training did significantly improve knowledge about partograph use and labor emergencies among KTZ midwives. Further research is planned on the impact of such trainings on maternal and neonatal outcomes.
The Anticoagulation Safety Program at Beth Israel Medical Center in New York City


Background: Anticoagulants are one of the top-five drug classes associated with patient safety incidents in the United States according to a report by the Joint Commission in 1999. The three most common anticoagulants used are unfractionated heparin (UFH), low-molecular weight heparin (enoxaparin), and warfarin (coumadin).

Goals: The Beth Israel National Patient Safety Goal Taskforce for Anticoagulation strived to establish a comprehensive Program to effectively decrease the number of adverse events and medication errors associated with anticoagulants.

Methods: Between 4/1/08-1/1/09 responsibilities were assigned to each member of a new interdisciplinary team and a work plan was put into place. Interventions included a newly created Medication Error Subcommittee, updated Policies and Procedures surrounding the use of Heparin, Enoxaparin, and Warfarin, an enhanced Intervention and Medication Error Database, Anticoagulation Pocket cards, a new educational web-based Module, and ongoing educational programs involving Noon Conference and Grand Rounds lectures.

Results: A group of physicians-in-training were asked five key questions which tested their knowledge about anticoagulant indication and use. Six months since the inception of the program, the percentage correct increased to 73% from 40%. The number of INRs > 4 in patients who received at least one dose of warfarin before and after these interventions decreased by 23%. The number of PTTs > 110 in hospitalized patients decreased by 20%. Anticoagulant related medication errors decreased from 37% to 22%. Finally, the number of anticoagulant related Adverse Drug Reactions (ADRs) before and after interventions decreased from 59% to 50%.

Conclusion: Proper use of anticoagulants is a critical patient safety issue.

Implications: Intense collaboration between Pharmacy, Laboratory, Nursing, and Providers is required for successful program implementation. Ongoing feedback to providers in addition to education and clinical decision support are key components in reducing adverse drug reactions and medication errors related to anticoagulation.
Resident Stress: Lessons from Feelings, a Storytelling Intervention

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Background: Learning to cope with the emotional stress inherent in practicing medicine is one critical skill physicians must begin to master during residency. This stress can impact the well-being of the provider, and potentially be detrimental to patient care. However, there are no standard approaches to managing this issue.

Objective: To assess the perceived value of a narrative medicine program for teaching residents how to cope with stress.

Methods: We initiated a monthly meeting during which the house staff share and discuss psychological issues. Using the technique of narrative medicine, the resident tells a story from a personal perspective and then from someone else's, such as a patient, family member, attending, or a layman. Topics were most often case-based and focused on the loss of empathy, death of a patient, negative criticism, the difficult patient/family, and the non-adherent patient. A voluntary focus group of nine pediatric residents subsequently met to discuss strengths and weaknesses of this program. Their discussion was analyzed for common themes.

Results: General themes included:
1. The program is important because it officially acknowledges our feelings.
2. Hearing each others’ experiences and looking at other perspectives helps.
3. Having a time to reflect, share, and be heard is important.

A typical resident comment was, “Telling the story from different perspectives allowed (us) to step back from the experience, reflect, and examine positive aspects and to focus on the human aspect.” All residents felt it was critical to use specific cases rather than general topics.

Conclusions: The residents in our focus group agree that the issue of resident stress must be addressed. We found that narrative medicine may be a useful tool. However, further study is necessary to identify the best methods for addressing this issue.
The Diabetes Registry Dialogues Pilot: A Practice Improvement Project to Reframe Health Information Technology and Improve Patient Care Measures

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**Purpose:** Diabetes is a common chronic illness whose medical management often does not meet guidelines. A chronic care model, including a registry, can improve care by enabling planning for care, continuity, prompting at the point of care to trigger appropriate practice actions, and measuring of these actions. We proposed to evaluate whether an educational program, including the support of the installation of an internet-based diabetes registry, would enable the capture of measures of diabetes care in those practices, and improve those measures.

**Methods/Interventions:** The New York Diabetes Coalition was funded by the New York State Department of Health to design interactive simulation based educational materials to

- Promote the adoption of registry systems,
- Facilitate their effective use to improve quality of care, and
- Teach the skills necessary to motivate patients to be actively engaged in managing their diabetes.

**Experimental design-educational intervention:**

- Pre-post knowledge and intentions of registry use
- Uptake of registries
- Patient health outcomes data for practices using the registry.

**Results:** Eight sites were enrolled; one closed. Eighteen practitioners caring for more than 1400 people with diabetes were enrolled. Information on pre-post questions for all learners has been collected. The education has led to the sustainable collection of our key patient level data elements through the registry itself.

**Conclusions/Implications:** Education linked to diabetes registry adoption has led to successful implementation of registries, robust data collection, and a sustainable environment for practice care improvement. Data from registries will guide future educational efforts and an expansion of the program.
**AKESO – An Innovative Web-Based Interactive Problem-Solving Learning Tool**

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**Background/Goals:** Current challenges to medical education include less direct patient contact (work hour restrictions), less independent thinking and problem solving (increased requirements for direct attending supervision), and less teaching and feedback (less protected time for attending physicians). The goal of this project was to create a web-based, interactive, problem-solving learning tool to address these challenges.

**Methods/Results:** We developed a web-based program that allows the creation of level-specific Case Studies (CS) and Assessments. During the CS, the learner is provided information (history, physical examination, test results, or clinical course) in a series of steps. For each step, the learner must develop and prioritize differential diagnoses (with rationale), and make decisions how to proceed, including ordering tests (with justification), until ultimately, the learner reaches a final diagnosis. Immediate feedback is provided to the learner in the form of a side-by-side comparison between the learner’s responses and the CS creator’s “Perfect Path”. The scoring system takes into account the differential diagnosis, the appropriateness of tests ordered, and the final diagnosis. The CS end with a Final Discussion aimed at providing a summary of the topic and clinical practice guidelines. After a predetermined time, the learner is invited to complete an assessment aimed at assessing retention of knowledge acquired. All learners who complete a CS have access to a Bulletin Board for further communication with each other and the CS creator. User-specific reports can be generated to assess learners’ performance against peers, and program directors can assess performance of learners, teachers, and the program itself.

**Conclusions:** We developed a web-based, interactive, problem-solving program that can be used as both a learning and assessment tool. It provides immediate feedback, assessment of retained knowledge, and reporting tools. Finally, the program directly addresses each of the General Competencies, satisfying requirements of the ACGME.
Evolution of the Family-Centered Maternity Care (FCMC) Website: from Information to Education

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Background: The Family-Centered Maternity Care (FCMC) website began in June 2008 as a reference site for family physicians providing prenatal care. Materials were added as requested by residents and attending physicians. From June to December 2009 the website was accessed by 702 readers worldwide.

Rationale: Teaching on the web is a relatively recent method in medical education, used in clinical settings where didactic teaching time is limited. On the obstetrics floor, didactic sessions were often cut short by clinical responsibilities, duty hour regulations and somnolence of the post-call resident. Residents requested that material from didactic sessions be placed on the website. In January 2010, the purpose of the FCMC website was expanded from a reference site to an educational tool for family medicine residents located at fcmc.weebly.com. There are no other medical education websites devoted to maternity care education for family medicine residents.

Problem/Goal: Does a website improve learning outcomes for family medicine residents during their obstetrics rotation? There are 10 interns per year, each completing a two-month obstetrics rotation. The goal of the resident education portion of the website is to provide problem-oriented evidence-based educational materials for asynchronous learning during the obstetrics rotation. In addition, the site will meet quality standards for websites and take advantage of web format and flexibility. The needs assessment for topics presented includes resident request, quality assurance chart review, and evaluation of topics on in-training examinations.

Evaluation: Evaluation of the resident education component of the website will include: quality evaluation as described by Alexander and Tate (2001), website use data from the web host and an independent statistics tracer, survey of resident attitudes regarding the site, scores on the mid-rotation quiz and in-training exam subscores.