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1. Resident Education in Developmental-Behavioral Pediatrics: What’s in a Month?
Daniel Schulteis, MD, Daniel L. Coury, MD, Amy Newmeyer, MD.
Nationwide Children’s Hospital, Columbus, Ohio

Purpose: A curriculum for Developmental–Behavioral Pediatrics (DBP) was created in the 1997 ACGME Resident Education Guidelines. Despite a formalized experience, practicing pediatricians indicate this change has had little impact on their ability to manage developmental and behavioral concerns. This study assessed DBP rotations to determine if the 1-month requirement realistically provides exposure to the field.

Methods: 121 of the 195 ACGME pediatric residencies provided DBP contact information (62% response). A 13-item internet survey was distributed with a 67% response rate. Respondents included program directors/coordinators, rotation directors/coordinators, and chief residents.

Results: The national average for DBP-specific exposure was 22.5 half-days. Residents take vacation in 50% of programs, with a large percentage taking a full work week (10 half days). Despite 50% of the respondents indicating post-call days adversely impact experiences, 45.1% of residents take <2 calls/month. 68% of programs require resident participation in unrelated activities. 21% of programs identified duty hour restrictions adversely affecting resident experiences, while 35% noted limitations within the department (limited faculty, clinics, etc.).

Conclusions: Residents continue to get limited exposure in DBP. Work hour requirements have reduced some experiences, but the majority of residents are limited by vacations, residency requirements, or program limitations. Residency programs should re-assess the DBP rotation to ensure adequate training is provided, and individual DBP sections may need to pursue alternative ways to expose residents to the field.

2. Clinical Teaching Site Does Not Affect Examination Performance in an Emergency Medicine Clerkship
Aaron W. Bernard MD, Brian Hiestand MD, Sorabh Khandelwal MD

Objective: Increasing size of medical school classes has resulted in the use of community hospitals for Emergency Medicine (EM) clerkships. While differences in clinical experience are expected, it is unclear if they are significant. We set out to investigate whether or not clinical site affects student learning using clerkship examination score as a marker.

Methods: We performed a retrospective analysis of data from 2003-2009 for a mandatory fourth-year EM clerkship at one institution that utilizes academic (EM residency), affiliate (residency training site but not EM) and community hospitals as clerkship sites. Multiple variable linear regression was used to examine the relationship between clerkship site (academic vs. affiliate vs. community) and end of clerkship written exam score. Secondary variables included time of year rotation was completed and whether the student matched in EM. As test scores globally increased over the study period, a time factor was also included. An alpha of 0.05 was required for variable retention in the model.

Results: 1,084 students completed the clerkship and had complete data for analysis. Factors associated with higher test score were student match in EM (beta coefficient 2.97, 95% confidence interval [CI] 0.69 – 5.26), completing clerkship in July – September (beta coefficient 2.46, CI 1.23 -3.69), and later year during the study period (beta coefficient 1.27, CI 1.18 – 1.37). Clinical site was not a significant predictor.

Conclusion: We found no evidence that clerkship location affected final exam score. Academic EM clerkships may consider partnering with other hospitals for educational venues without compromising education.

3. An Interdisciplinary Approach to Teaching Medication Adherence: A Collaborative Between the Colleges of Pharmacy and Medicine
Trinkley KE,1 Kelley KA,1 Langan MS,2 Legg JE,1 DuVall VC,1 Post DM,2 Goleman MJ,2 Beatty SJ1
The Ohio State University Colleges of Pharmacy1 and Medicine2

Purpose: Medication adherence is a challenging, yet essential component to optimal medication outcomes. This activity was designed for pharmacy and medicine students to experience the challenges of adherence, so they may better empathize with future patients and strategize methods to overcome potential barriers. A secondary objective was to provide an inter-disciplinary learning experience.

Description: This activity was the result of collaborative efforts from the Colleges of Pharmacy and Medicine at The Ohio State University. The core activity was to have pharmacy and medicine students adhere to a complex placebo “medication” regimen. To make this possible, student pharmacists across 3 graduating classes participated. Thirty six 1st year student pharmacists were
responsible for filling and labeling 5 medication vials with empty gelatin capsules. A patient education handout was also included. The “medications” were dispensed by 100 3rd year student pharmacists to 127 2nd year pharmacy and 200 2nd year medicine students; half of the medicine students were counseled by student pharmacists. Then, 2nd year pharmacy and medicine students were instructed to take the “medications” as directed for 6 days and record their adherence. The 2nd year student pharmacists were required to write a reflective paper on the experience, while medicine students shared their experiences in small classroom discussions.

**Results and Future Directions:** This activity was well received by both faculty and students of the Colleges of Pharmacy and Medicine. This collaborative activity will be repeated next year. In addition, other collaborative efforts between the two Colleges are anticipated in the near future.

4. An Enhanced Nutrition Curriculum to Better Prepare Residents for Primary Care Practice: Assessment of Current Needs

Shilpa Sangvai, MD,MPH¹, Melissa Skaug, MD², John D. Mahan, MD³, Rajesh R. Donthi, MD², Kadriye O. Lewis, EdD⁴

**Purpose:** The purpose of this study was to assess the nutrition education needs of general pediatricians in order to create a complete and applicable online curriculum in pediatric nutrition for residents.

**Methods:** A comprehensive survey was sent to recent graduates of Nationwide Children’s Hospital residency program who are now practicing primary care. The 31 question survey addressed to what extent nutrition plays a role in patient visits, topic-specific nutritional priorities for visits according to age group, self perceived knowledge and ability to counsel families on nutritional topics, how well the residency program prepared them to address the nutritional needs of their patients, areas for improvement in residency training and topics of greatest importance.

**Results:** 39 (59%) of graduates completed the in-depth survey. Self perceived knowledge of nutrition and the ability to counsel families were reported as 10% poor, 60% adequate, 25% good and 5% excellent at residency completion and 20% adequate, 50% good, and 30% excellent currently. Topics which were reported as most essential to incorporate were obesity/metabolic syndrome, breastfeeding, toddler transition and picky eating, basic newborn needs and formula, failure to thrive and school age nutrition.

**Conclusion:** There is a clear need to better educate residents on nutrition topics and to better equip them for nutrition counseling. Specific topics have been recognized as a priority and areas of deficiency have been identified. Using this information, the authors are collaborating with six other institutions to create a comprehensive online nutrition curriculum which can be shared amongst programs.

5. Fellows as Teachers: A Model to Enhance Pediatric Resident Education

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**Keywords:** resident education, fellow teaching, pediatrics

**Running title:** Fellows as teachers

**Word Count:** Abstract – 249;

**Abstract**

**Objective:** Pressure on academic faculty beyond their role as teachers continue to drive interest in the development of innovative models of resident education. The role of post-graduate clinical fellows as a positive force in pediatric resident education has not been previously examined. The objective is to assess the impact of a fellow-led education program on pediatric resident learning and
experience. Methods: The study was conducted in the neonatal intensive care unit (NICU) at a large Midwestern academic institution. The NICU fellows designed and implemented an education program specifically for residents during their NICU rotation. To assess the efficacy of the program, three separate and unique evaluations of resident experience and knowledge-base were performed. Results: 105 residents completed the on-line evaluation. Scores were markedly higher in areas of teaching excellence (4.44 out of 5 vs 4.67, p<0.05) and overall resident learning (3.6 out of 5, versus 4.61, p<0.001) after the program was implemented. Resident scores on a structured examination were significantly improved (73.7% to 79.5%, p<0.05) after exposure to the education program. Results of the anonymous survey revealed that 87% of participating residents believed that NICU fellows are very important to their overall training and education. Conclusions: A fellow-led education program positively contributes to resident learning. While fellows are often believed to be a detracting factor to residency training, pediatric resident attitudes toward the fellows were generally positive. We offer recommendations to academic programs that educate both residents and fellows in an effort to create a mutually beneficial work environment.

6. Narratives of Professionalism: Medical Student Observations on Professionalism Education and Development
Authors: Matthew Malone BA, Aaron W. Bernard MD, Nick E. Kman MD, Sorabh Khandelwal MD

Abstract
Objective
Professionalism development is thought to be influenced by the informal and hidden curriculum. The primary objective of this study was to better understand this experiential learning. Secondarily, the study aimed to better understand professionalism education specifically related to clinical experiences in the Emergency Department.

Method
A thematic analysis was conducted on 377 professionalism narratives and 400 response comments from the 404 fourth year medical students rotating at 13 different central Ohio Emergency Departments from July 2008 through May 2010. The narratives were analyzed using thematic categories based on prior research. The narratives were also analyzed using additional categorizations, including: were the narrative positive, negative or a “hybrid”, and the individuals involved. Response comments were also organized by the thematic category of the post on which they were commenting.

Results
Observations involving interactions between attending physician and patient were most abundant followed by interactions between attending physician and family. The narratives were coded as positive 198 times, negative 128 times, and hybrid 37 times. The two most abundant narrative themes involved respect (36.9%) and time (23.7%). Response comments were in proportion to the narrative categorizations. Further, the thematic analysis revealed that narratives of clinical interactions (92.7%) outnumbered narratives in the teaching-learning domain (7.3%).

Conclusion
This analysis suggests the informal and hidden curriculum to be influential in professionalism development. Furthermore, it seems the Emergency Department provides diverse, powerful, and thought provoking experiences to students. Future work should be done to better determine how a formal curriculum could enhance these learning experiences.

7. Staphylococcus aureus Bacteremia (STAB) is Terrible (IT): a novel app for the iPad/iTouch
Debra A. Goff PharmD. FCCP, Kim Hawksworth R.Ph. The Ohio State Univ Med Ctr Columbus OH

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Background: Traditional methods of educating students, and housestaff include didactic lectures, grand rounds, case conferences, bedside teaching, pocket books, antimicrobial stewardship programs (ASP) individual faculty and the hospital intranet. In the era of instant internet information, educators must be ready to adapt methods of teaching for the next generation of clinicians. All medical, PharmD students and medical interns receive an iTouch. Our purpose is to develop an app to educate clinicians on optimal management of STAB.

Methods: ASP and information technology (IT) met to determine the best approach. ASP developed the content. Users could explore key features of STAB: diagnosis, epidemiology, microbiology, management, antibiotics, case study and patient information. The ASP team used iPads to demonstrate the STAB-IT app during patient care rounds or in a lecture format.

Results: IT recommended a rich internet application (RIA) which offers advantages over a traditional app written for Apple’s mobile platform. These advantages include: access by an array of web enabled devices (including desktop/laptop computers), program updates occur at the server level thereby shifting responsibility for updates away from the user, improved security because only devices connected to our hospital’s network would have access, and elimination of the approval and licensing requirements by Apple.

Conclusion: A STAB-IT app for all web enabled handheld devices was developed to educate clinicians. An innovative method to educate clinicians and provide medical information that is accessible at the bedside is our goal. The app method of learning is applicable to all medical centers.
Objective
Despite extensive experience teaching residents, surgeons are an untapped resource for educating preclinical medical students. We hypothesized that by involving surgeons as teachers earlier in the medical school curriculum, medical students’ interest in surgery as a career will increase and their opinions of surgeons as teachers will improve.

Methods
We have designed and implemented five programs involving surgeons as educators in the medical school curriculum. The first program, started in the fall of 2008, introduced surgical faculty as teachers in the first year medical student anatomy dissection labs. Programs initiated in the fall of 2008 included: Surgical Clinical Correlates in Anatomy, which engaged students in faculty directed cadaver surgery; Clinical Pathologic Conferences in Anatomy a surgeon-led monthly conference which combined clinical cases with anatomy, radiology, and pathology findings; and a faculty-student mentorship program for female medical students. Table Rounds, a surgeon-led anatomy review that used clinical scenarios to quiz students was initiated in the fall of 2009.

Results
All five of these programs were successfully integrated into the medical school curriculum. Each program provided active participation of the surgeons as educators. While student opinion of surgeons as educators improved, there were no significant changes in student interest in surgery as a career.

Conclusions
Innovative education programs can be successfully implemented into the medical school curriculum to engage surgeons as educators. As a result, an invaluable resource has been identified and tapped thereby resulting in an improved opinion of surgeons as educators.

Purpose. The primary method of assessing medical knowledge acquired by students in the Integrated Pathway (IP) Program is by examination using tests constructed of multiple choice questions. Over the course of the 2 year IP curriculum, 21 examinations are administered that in total contain over 2000 multiple choice questions. In order to more effectively manage this large set of test questions, we designed a coding system for tagging questions with specific curricular information. The new Tagged Exam Question Electronic Database (TEDEQ) has been implemented into the IP Program, and we are now utilizing this information for course administration. Methods. Categories specifying exam question information were defined after considering curricular structure, cognitive classification, and curricular objectives addressed by test questions. The categorical breakdown was then converted into a numerical tag for each question. The coded information was incorporated into an electronic database using novel features of the categorization tools of SofTeach, a module of the ExamSoft test management system. Results. Using the TEDEQ system a numerical code can be readily assigned to any multiple choice question used in the IP curriculum as illustrated with several example questions. A report containing class performance information based upon the various question categories can be generated for curricular and test management purposes. Conclusions. The TEDEQ system has proven relatively easy for faculty to implement. Information regarding test content and individual performance can be easily generated for faculty and students following each examination. Such a system may prove useful for course management at other institutions.

10. Clients as Proprietors of their own Occupational Wisdom
Clients as Proprietors of their own Occupational Wisdom

The activities, tasks, values and roles of the client comprise their Occupational Wisdom that we, as therapists, can only know by observation or conversation with them. The client is the proprietor of their own occupational wisdom so the therapist must listen carefully and reflect back to understand what the individual’s response is to disability. Despite this holistic approach to real-life experiences, occupational therapists and occupational therapy students often underestimate client capabilities.

The objective of this study was to assess changes in students’ perspectives about disability following multiple, direct experiences with participants with disability in the context of their daily life. By learning what a disability means to an individual, collaborative intervention can result in shorter hospital stays, better goal attainment and more realistic intervention plans. Participants, who had a disability and were willing to participate with pairs of occupational therapy students for approximately 15-20 hours during a three month period, were recruited from the central Ohio community. Students interacted with the participants in their own contexts and participants varied in diagnosis and age. The data collected was from focus group interviews and thematic summary papers based on individual student research diaries. Themes that emerged were related to system issues, reality of life and uniqueness of disability.

While sample size was small (n=40), students expressed a change in their views about what it means to have a disability and reflected on how this may impact their practice as occupational therapists in the future.

11. Initial Success of the Inaugural Ohio State University Faculty Teaching Scholars Program

Carol S. Hasbrouck, MA, Assistant Dean, The Ohio State University
Rollin Nagel, PhD, Clinical Professor, The Ohio State University
David P. Way, MEd, Senior Research Associate, The Ohio State University
William A. Hudson, EdD, Associate Director, The Ohio State University
Larry Hurtubise, MA, Education Technology Consultant, The Ohio State University

Purpose:
Ohio State University’s newly established Faculty Teaching Scholars Program (FTSP) focuses on developing better educators and educational researchers with a goal of increasing scholarly activity. Scholars receive instruction in educational methodologies and research and are expected to complete a scholarly project by the end of the 15-month program. This abstract highlights initial efforts to assess the success of the scholarship portion of the program.

Methods:
Monthly interactive, educational research sessions were presented to the first cohort of Scholars. After meeting individually with educational specialists to clarify their projects, Scholars were expected to develop a research protocol, submit an IRB, conduct a scholarly project, analyze data, present their project at an institutional education retreat, and submit their work for presentation and/or publication. A 10-point pre and post self-assessment survey of Scholars’ skills in 27 scholarship areas was administered to assess the impact of the FTSP on perceived skills.

Results:
Eleven of 12 Scholars presented a scholarly project at the retreat. To date, six projects have been presented (or accepted) at international/national/regional conferences; one has been published; others being submitted. All 12 Scholars responded to the pre-assessment and eleven to the post-assessment survey. One-tailed paired t-tests analyses compared pre to post perceived ability for each skill. Pre to post improvement was demonstrated for 24 of the 27 items with significant improvement (p<.05) for 8 items.

Conclusions:
The scholarship portion of the FTSP was considered successful based on the Scholars’ improvement in perceived scholarship skills, projects completed, and dissemination of scholarly work.

12. Improving communication skills of Internal Medicine residents: A pilot curriculum in the Medical Intensive Care Unit (MICU)

Jillian Gustin MD, Jennifer McCallister MD, Maria Lucarelli MD, Sharla Wells-DiGregorio PhD

Purpose:
Multiple studies find that Internal Medicine residents feel unprepared to facilitate medical decision-making with patients and families who face life-limiting illnesses. Residents receive limited communication training and rarely in settings with complex communication needs such as MICUs.

This study examines i) the effect of a communication curriculum embedded in a required MICU rotation on resident confidence in performing goals of care discussions, and ii) resident satisfaction with formalized feedback from Palliative Care faculty after family meeting encounters.

Methods:
This pilot curriculum for IM residents (n=17) consisted of: i) structured observations of Palliative Care Attendings by residents during family meetings, ii) group didactic on communication skills, iii) group reflection on communication in the MICU, and iv) supervision of residents facilitating family meetings with immediate feedback using a checklist. Residents completed self-efficacy and satisfaction surveys before and after the rotation.

Results:
Pilot data suggests that a formal curriculum in communication for IM residents can significantly improve self-assessed confidence in performing goals of care discussions particularly related to: i) managing conflict among family members and care providers, ii) discussing treatment options based on goals, iii) delivering bad news, iv) eliciting patients values/goals from family’s perspective, v) exploring family preferences for communication, and vi) summarizing the care plan with the family. The majority of residents, regardless of level of training, found faculty feedback after family meetings to be helpful.

Conclusion:
In general, our pilot data supports learner observation, faculty feedback and the use of a checklist as effective tools in the development of communication skills.

13. Self-Guided Video Review of Performance Does Not Improve Learning in Basic Simulated Tasks
Daniel Box BS, Nilay Shah MD, Benoit Mapa, Rollin Nagel PhD, David Way MS, Rebecca Detorre CCRC, Alan E Harzman MD, The Ohio State University, Columbus, Ohio, USA
Contact: alan.harzman@osumc.edu, 366-8720

Introduction Video recording of laparoscopic procedures has become simple and inexpensive in many institutions. Our goal was to determine if assigning trainees to review videos of their performance of laparoscopic tasks without further coaching would speed their learning of the tasks.

Methods Twenty five medical students (years 2-4) and 25 junior residents (PGY1 and PGY2) performed the bean drop, block move, and running string laparoscopic simulated tasks. They repeated each task 10 times, with a week break between repetitions 5 and 6. Subjects were randomized to watch (experimental group, n = 25) or not watch (control group, n = 25) the recording of their performances after each attempt. The sample size was chosen with power to detect a 10% difference between the groups. The tasks were performed in the ProMIS® (Haptica Ltd., Dublin, Ireland) box, which recorded time, smoothness and path length. Two-way ANOVA with repeated measures on one factor (10 task repetitions) was used to analyze performance differences between the two groups.

Results Table 1 shows that there was statistically significant improvement across time in the entire cohort. However, there was no significant difference between the intervention and control groups. That is, they both improved but at similar rates.

Conclusions As expected, repeated practice improves performance on these basic tasks. However, unguided review of a novice’s own performance does not lead to significantly improved performance on simple tasks. Whether unguided review helps with longer tasks and what degree of guided review might help will be the subject of further investigation.

Table 1

<table>
<thead>
<tr>
<th>Tasks</th>
<th>Measurement</th>
<th>Across Repetitions (p)</th>
<th>Between Groups (p)</th>
</tr>
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<tr>
<td>Bean Drop</td>
<td>Time (s)</td>
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<td></td>
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<td>Smoothness</td>
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<td>Block Move</td>
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<td>Smoothness</td>
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<tr>
<td>Running String</td>
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14. Use of the Objective Structured Clinical Examination (OSCE) to Evaluate Orthopaedic Resident Clinical Skill Performance

Julie Bishop, MD Matthew Beran MD, Micheal Griesser MD, Corey Vanhoff MD, Micheal Quackenbush DO, David Flanigan, MD

Summary: Our previous research uncovered deficiencies in the physical examination (PE) skills and knowledge of orthopaedic residents. To improve upon this core competence, we trained standardized patients (SPs) to simulate 4 different clinical scenarios. History taking and PE checklists were created, the encounters were video taped and evaluated by sub-specialists. A 5 question post-exam decision making quiz was created. The SPs evaluated communication skills using a validated score card. Results were compiled and discussed with the residents individually.

Objectives: Our goal was to use trained standardized patients to simulate clinical scenarios in an effort to evaluate the communication, history taking, physical examination and decision making skills of orthopaedic residents of all levels.

Materials and Methods: We developed 4 clinical scenarios: upper and lower extremity, trauma and spine with check lists of the most pertinent points to be obtained in the history and necessary PE skills. We developed a score system for the checklists. We trained the SP’s for the scenarios. We video-taped the resident encounters with the SP’s and these videos were reviewed by sub-specialists with the check lists. Post-exam the residents took a 5 question decision making test based on the scenario. They were also rated on their communication skills by the SP’s using a validated score card. All scores were compiled and reviewed with the residents individually.

Results: 22 residents participated in the OSCE, years PGY2-5. The overall score was a 66% - which was the average of all testing parts of each scenario. The scores were significantly better for the trauma scenario, 78% (p<0.05) than shoulder, 67%; spine, 64% and knee 59%. When compiling the scenarios, average history taking scores were 53%; PE scores:60%; decision making:64% and communication skills: 90%. There was no significant difference between years in training, except for communication skills, which were better in the PGY5 year compared to PGY2 (p=0.03). However, more cohesion in the patient exam and interview was subjectively seen with years in training.

Conclusion: We have developed a systematic approach to the assessment of our orthopaedic residents’ history taking, PE and communication skills using patient simulation. Our results do expose a deficiency in the skills of our orthopaedic residents, which we suspect may be universal. We plan to evaluate the efficacy of future curricular changes by instituting a yearly OSCE.

15. Ultrasound teaching in Family Medicine: A National Survey

Jacob Bryan, MD; Lindsey Bostelman, MD; David Way, MEd; Erika Kube, MD; David Bahner, MD

Objective: Ultrasound could be a practical diagnostic tool for family practitioners, although there is controversy about ultrasound training in family medicine residency programs. The purpose of this project was to determine what ultrasound procedures are being taught in U.S. family medicine residencies, what directors think should be taught, and barriers that prevent the teaching of these procedures.

Methods: A survey was assembled by panel and administered electronically to all family medicine residency programs in the United States.

Results: A 48% return rate was achieved. The most common procedure taught to family medicine residents was basic prenatal ultrasound, but only 33% of the programs list it as required procedure. Half of the programs only had two faculty qualified to teach ultrasound. Another 25% had no qualified faculty. Programs were more likely to teach central line placement, paracentesis, and thoracentesis without the aid of ultrasound. Only 2% of programs reported using ultrasound to aid with incision and drainage of an abscess compared to 38% who felt that these procedures should be ultrasound-guided. Ultrasound was available in the outpatient family medicine clinic for 61% of programs. The most common barriers to teaching ultrasound was inadequate knowledge and experience of preceptors, inadequate institutional support, and inadequate credentialing tools.

Conclusions: Despite ultrasound potential in family medicine, it is not currently being taught outside the obstetric setting. The majority of programs teach common procedures without the use ultrasound. If ultrasound is truly to become the stethoscope of the twenty-first century, more educational infrastructure will be needed.
16. Use of Chargemaster Management Software in Teaching Reimbursement Methodologies in a Health Information Management Education

Brodnik, Melanie S; Casto, Anne; Casto, Emily

**Purpose**

Educators are challenged to provide students with learning resources necessary to meet changing professional competencies. These resources include health information technology (HIT) products that support the collection, storage, retrieval and management of healthcare data and information. While health information management (HIM) academic programs have exposed students to encoder usage for clinical coding purposes, the need to expand student knowledge in reimbursement methodologies has been identified as necessary for future practice. To address this issue HIMS partnered with Craneware, Inc., to investigate the applicability of using their Chargemaster Toolkit™ in an academic environment.

**Methodology**

The respective toolkit was installed and learning modules and exercises designed to provide students with hands-on experience in the use of chargemaster management software. The learning modules where incorporated into the programs course management system. A pre-test and post-test was administered for evaluation purposes in addition to an on-line evaluation tool to assess student satisfaction with the learning modules and educational experience. Data related to student learning styles was collected in order to better understand the aptitude for student learning using a HIT software application previously not used in an HIM academic setting.

**Results**

The poster will provide the goals, process, and milestones of implementing chargemaster software in an academic setting. It will discuss the preparation, implementation and evaluation of learning modules that enhanced student problem solving and critical thinking skills and how this project may provide opportunity for other HIM programs interested in expanding their students skills in chargemaster management.

17. Feedback from Students about Educational Sessions Addressing Wellness in the Workplace: Helping Students Understand Compassion Fatigue, Burnout, and Workplace Violence

By David Kasick, MD; Julie Niedermier, MD

**Objective:** There are concerning statistics regarding the well-being of physicians in the workplace. Violence in healthcare settings is on the rise, including risks to physicians. Additionally, it has been shown that burnout progressively develops over the course of medical education and can have detrimental consequences. The objective of this exploratory study is to assess student feedback to an educational curriculum focused on student wellness in the workplace.

**Methods:** Students are participating in sessions added to the psychiatry clerkship which center on student wellness. These informational sessions and group discussions address compassion fatigue, burnout, and violence in healthcare settings. Students complete evaluations at the conclusion of the clerkship and may additionally offer subjective comments.

**Results:** An overwhelming majority of students rate these sessions as “above average” or “best” relative to other educational activities. Preliminary subjective feedback also describes common themes about the importance and relevance of these topics to students; they recognize the need for resources, protective strategies, and further open discussion about safety concerns.

**Conclusion:** Students are receptive to formal educational sessions addressing issues of student physical and emotional wellness. They identify college of medicine leadership and the psychiatry clerkship as supportive of and responsive to their well-being. The topic is highly relevant and applicable in today’s workplace and the researchers recommend conducting similar sessions to a wide-range of workers within the healthcare settings, including medical schools and allied health professions.

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18. Preliminary Report: The Summer Scholars’ Program, 2010

Thomas E. Williams, Jr, Benjamin Sun, Patrick Ross, Jr., and Steven Cotter
Objective: We wanted to give our first year students an experience on cardiac and thoracic surgery between their first and second year in order to give them exposure to our specialty. One person had already been awarded an AATS summer scholarship. We noted the papers from Johns Hopkins.

Methods: Two more people applied. We sought funds from our retired faculty to award all the same amount. We appointed mentors in adult thoracic surgery, adult cardiac surgery, children’s surgery, and research. We organized a curriculum as seen in the Table 1; the pediatric rotation was at Nationwide Children’s’ Hospital (NCH). We organized a reception for the recipients to meet the faculty and donors. We gave the students the contact numbers for the mentors, their administrative assistants, and the mid-level providers, "the go people for clinical activity"; we provided the faculty advisor and the administrative support contact numbers, as well.

Results: The experience included scrubbing in operations, rounding with the house staff and mentors, presence at the clinics and office hours, and replacement of an aortic valve on a pig heart. Student “B” is working on a case report with one mentor. As student “C” said “At each of these sites, I attended clinic office hours at least twice per week. Clinics showed me the patient-physician trust that is so important to nurture and let grow in. Patients need to have complete faith and be honest with their physicians in order to entrust their lives in the hands of the men and women in white.”

Conclusions: The summer scholars were very enthusiastic about their experience. The faculty mentors were convinced that this was a good experience for both the students and the faculty who participated. Finally, for less than $10,000 you can organize a summer scholar’s experience that will expose medical students to our specialty for two months.

<table>
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<th>Student C</th>
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19. Assessing the transition to a case-based sexuality curriculum

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Objective: Ensuring that medical students gain familiarity and comfort with sexual issues is an important aspect of medical education. This study compares the knowledge and attitudes of students who have completed a traditional lecture- and discussion-based sexuality curriculum with those of students who have completed an innovative case-based, small group curriculum.

Methods: Students completing the second year curriculum in two consecutive years were administered a questionnaire about their knowledge and comfort level about sexual topics. The sexuality curriculum completed in 2010 involved case-based learning with standardized patients. While all students spent a similar amount of time in small discussion groups, the students completing the course in 2009 also received 4.5 hours of lecture on sexuality topics. Both sets of students were assigned similar readings.

Results: Questionnaires were received from 199 students completing the lecture-based curriculum and 192 students completing the case-based curriculum. While similar proportions of students reported comfort with taking a sexual history, students who completed the lectures felt significantly more knowledgeable and more comfortable about sexual counseling, treating sexual dysfunction, discussing sexual orientation, and identifying the impact of illness on sexuality (all p≤0.01). The group receiving lectures also rated the importance of sexual discussions more highly for both routine encounters and in treating medical illness.

Conclusions: A traditional sexuality curriculum incorporating didactic sessions gives medical students greater knowledge and comfort about sexual health issues. Although the difference seen may be a function of more time devoted to the topic, student feedback indicates that it is time well spent.
20. A Novel Self-Assessment Tool for Competency in Clinical and Translational Science

Phil F. Binkley, MD, MPH, Rollin Nagel PhD, Stephanie Vecchiarelli, EdD, MPH

Objective: The National Center for Research Resources (NCRR), which funds Clinical and Translational Science Awards, has established competencies to be acquired by scientists pursuing these fields. Research training programs were challenged to provide relevant training and assess their success of these efforts.

Methods/materials: We designed a self-assessment tool with the NCRR competencies nested in 14 different categories. Respondents rated their competencies in categories ranging from “Novice” to “Expert.” The web-based assessment tool was administered to T-award trainees of The Ohio State University Center for Clinical and Translational Science (CCTS) and students enrolled in the Master of Public Health in Clinical Investigation program (MPH in CI) at the beginning and conclusion of the academic year.

Results: At the conclusion of the academic year, significant increases in the perceived level of competence were recorded in all domains. Significant interactions between time and trainee group (p < 0.05) were noted in competencies related to understanding external and internal validity, assuring quality of data intake and management, research application of cultural diversity and literacy, research application of team organization principles, and peer review activities participation (MPH in CI trainees trended towards a greater improvement.)

Conclusion: These analyses demonstrate: 1. Initial self-assessments guided the training focus; 2. post-training assessment reflects personal confidence increases in clinical and translational research skills; 3. greater increases in perceived competence in MPH in CI students may reflect more comprehensive training program. These findings provide the foundation for further investigation of the use of this assessment tool and its modification.

21. Target Tobacco – A Pilot Quality Improvement Project at Nationwide Children’s Hospital

Andrea Hahn MD and Judy Groner MD

Background: Forty percent of children in the US are exposed to tobacco smoke. The 5 A’s model is an approach to tobacco cessation. We developed a pilot project for parental tobacco cessation using materials from the Richmond Center for Excellence at one resident clinic.

Methods: A baseline chart review was performed of 50 visits: 25 sick (asthma, sinusitis, AOM, and URI) and 25 well, looking for documentation of discussion of parental smoking. The intervention included attending physicians providing resident education, placing posters in patient rooms, and having resources available on tobacco cessation. A post-intervention survey asked for self-report of discussion and documentation of second-hand smoke exposure. Chart review was performed of 25 sick and 25 well visits following the intervention.

Results: For well visits, pre and post intervention data respectively were 2/25 (8%) vs. 10/25 (40%) charts with documentation (p < 0.05, McNemar’s test). For sick visits, pre and post intervention data respectively were 2/25 (8%) vs. 16/25 (64%) charts with documentation (p < 0.01, McNemar’s test). Residents self reported improvement in asking parents about smoking. However, they reported documenting second-hand smoke exposure < 50% of the time, citing they were not documenting negatives. They also reported not consistently providing parents with information about quitting.

Conclusion: Addressing parental smoking in the resident clinic was less than optimal prior to initiation of Target Tobacco. Resident education has resulted in improvement. All residents have now received the education, and follow up studies will be performed on this subsequent intervention.

22. Training of Anesthesiology Residents in Formal Airway Management Rotation

Demicha D. Rankin, MD Clinical Assistant Professor/Neuroanesthesia Fellow

Airway management is an essential component of an anesthesiologist’s clinical responsibilities. Surprisingly, very few residency training programs have a formal clinical rotation dedicated to difficult airway management. In fact, a recent survey of anesthesia residencies found that only 27% of programs claimed to have a formal advanced airway course in their curriculum; the majority of these airway courses (60%) were of less than 2 weeks’ duration. Given the integral nature of anesthesiology and airway, we believe that our anesthesiology residents will benefit from a formal airway rotation. The objective of the rotation is to provide dedicated and uniformed training in various airway management techniques during a month long clinical rotation. This rotation allows the resident to become more comfortable with the array of intubation tools during a controlled clinical setting in order to prepare for the emergent or difficult airway. Additionally the rotation is set up so that there is a core group of dedicated faculty, which allow for closer monitoring of success with the intubation tools and feedback to the resident.
Some of the potential benefits of this rotation include enhancing the airway skills of our residents. Also, it encourages faculty to be more academic. Finally, having this rotation can be a valuable recruitment tool for future anesthesiology residents.

23. The Evaluation of Mastery Quizzes in a First-Year Professional-Level Foundational Science Course
Lisa MJ Lee, Assistant Professor, Division of Anatomy
Rollin W Nagel, Education Resource Specialist, College of Medicine
Douglas J Gould, Professor, Division of Anatomy

The purpose of the present study is to evaluate the effectiveness of online mastery quizzes in predicting and enhancing first-year dental students’ examination performance. Given the current wide-spread trend of decreasing student-instructor contact hours in North American dental schools, asynchronous learning tools that promote mastery learning are becoming increasingly important. First-year dental students taking an anatomy course at The Ohio State University were given a series of online mastery quizzes designed to promote asynchronous mastery learning. Each quiz composed of ten multiple choice questions randomly selected from a validated, closed question bank - representative of the upcoming examination material, was made available online. At the end of each quiz session, students were provided with a score, but no answer key, hence the only way to obtain the perfect score was to take the quiz over with randomized answer choices. Standardized regression weight analysis reveal that the mastery quiz scores from students’ first try often had a significantly predictive value for the corresponding exam scores. The survey on mastery quizzes indicates that almost all students took advantage of the online mastery quiz and a majority found the mastery quizzes to be useful for reinforcing course content, clarifying concepts and preparing for the examinations. In conclusion, online mastery quizzes are an effective resource to help students reach content mastery by engaging students in self-learning, testing and evaluation processes. These results suggest that mastery quizzes are not only a valuable educational resource, but also a predictive and evaluational tool for the course itself.

24. The Development and Use of a Synthetic Environments for Initial Training in Otological Surgery
Gregory J. Wiet, M.D, D. Bradley Welling, M.D., Ph.D., Edward Dodson, M.D., Soledad Fernandez, Ph.D., Thomas Kerwin, Bradley Hittle, Dinah Wan, and Don Stredney

Contact: Gregory.Wiet@nationwidechildrens.org

1. Objective or purpose
The objective of the effort is to develop, test, and improve a simulation environment for education of basic otologic surgical techniques. This includes a multi-institutional study to determine the efficacy of simulated environments within the residency curriculum.

2. Methods or Materials used
Osseous data is acquired using clinical CT and research micro-CT imaging systems. The synthetic environment includes a computer with a graphical processing unit (GPU), stereo speakers, stereo monitor with glasses, and haptic devices to provide force-feedback and tool interaction. 3D volume data is used as a representation of the regional anatomy. This data, combined with user interaction, is used to calculate the resulting sounds, forces, and visuals to emulate a mastoidectomy procedure.

3. Results, if available
The results demonstrate an effective environment for initial training in otological technique. The system is currently being improved for use in a multi-institutional study to consensually determine objective performance standards. These standards will be integrated to evaluate the use of the system as an automated assessment tool of surgical performance. We have developed advanced rendering techniques using the GPU to maintain high performance, and shown a way to incorporate a fluid module to simulate blood and other fluid during drilling. We are also developing an algorithm to automatically generate a score representing the quality of the mastoidectomy performed in the simulator.

4. Conclusions, including applicability to other schools or programs
This work advances the state of the art of surgical simulation involving the temporal bone. Techniques developed on this project are currently being translated to two sister projects, an interactive mouse atlas and a canine arthroscopy simulator for veterinary training.

25. Prevention and Management of Arthritis Among Older Farmers in Ohio
Background: Over 8 million older Americans live in rural areas (He, Sengupta, Velkoff, and Debarros, 2005). Among those aging in rural areas are farmers; there are an estimated 1 million farmers who are at least 55 years or older. The average age for an Ohio farmer is 55.3 years (U.S. Department of Agriculture, 2002). Farmers are at higher risk of developing arthritis and having it impact their work performance because of the physically demanding work and heavy lifting that they do. Objective: Given the scarcity of health care workers in rural communities (BLS, 2007), occupational therapy faculty in the School of Allied Medical Professions and OSU Extension are working to connect future healthcare professionals with the farming community through research and service learning projects around arthritis prevention and management. They recently received an OSUCares outreach grant to provide arthritis screenings in central Ohio. Methods: This project has been incorporated into several classes. For example, occupational therapy students have visited dairy and grain farms to learn about farmer’s work and their health issues. Others have examined evidence-based research on arthritis management. OT and health science students interviewed middle-aged and older farmers about their health status at county fairs. Results: The students have developed an arthritis screening tool and a physical fitness instrument to identify farmers at risk. These are currently being tested at community events. Students have also prepared handouts on arthritis management to distribute to the community. Students will be presenting papers and posters at state conferences.

26. Transitioning to the Clinical Doctorate: Attitudes of the Genetic Counseling Training Program Directors
Heather Hampel, MS, CGC, Dawn Allain, MS, CGC, Aaron J. Stuenkel, BS

Genetic counseling is a relatively new allied health profession which is considering a transition from an entry level master’s degree to a clinical doctorate (CD). The purpose of this study was to explore the attitudes of the 32 genetic counseling training program directors (PDs) regarding a transition to a CD. Twenty-three (72%) PDs completed the survey. 85% of respondents had a lot of experience (85% had >10 years as a genetic counselor and 76% had >5 years as a training PD). The majority (76%) worked for public, state-funded universities. The PDs were split on the issue of transitioning to a clinical doctorate degree; 42.8% were in favor of the transition, 28.6% were against the transition, and 28.6% were undecided. They disagreed about whether the transition would lead to higher salaries (29% yes, 38% no, and 33% unsure) or increased recognition among the healthcare team (40% yes, 40% no, and 20% unsure). However, the majority (65%) thought a CD would help genetic counselors to obtain faculty positions. In order to transition, the majority (70-85%) would have to submit new applications to their university and state Board of Regents. If the field transitions to a CD, 58% of the PDs thought that their program would convert, 37% were not sure and 5% would shut down. Interestingly, 47% of PDs would convert to a CD themselves, 26% would not, and 26% were not sure. Conclusions: Opinions are quite varied at this time regarding the possible transition to the CD among genetic counseling training PDs.

Educational Poster Presentation Proposal for Educational Scholarship Day 11/17/10

27. WIKI USE FOR EVALUATION OF MEDICAL STUDENT CASE BASED LEARNING IN COMPLEX INTERNAL MEDICINE PROBLEMS
Camilla Curren, MD, Rollin Nagel, PhD, Larry Hurtubise, MS, Holly Cronau, MD
Contact information: Camilla.Curren@osumc.edu , telephone 293-8054

The objective of this ongoing study is to compare scores obtained by medical students answering case-based internal medicine questions individually with those obtained by equivalent students answering collaboratively by wiki response

This randomized blinded study creates several groups of 3-5 senior medical students in each DOC2 Ambulatory Medicine month. Groups work together on one essay test question in the new Carmen Wiki format to create a collaborative response. Students who do not consent to work as a group respond as individuals. A stable grading rubric for the question is used to quantitatively score each response based on objective content. Students using wiki format have their scores compared to those of individual students graded using the same rubric and test question in the same month of the prior academic year. Students completing the wiki testing are surveyed to compare their educational efficacy and information use in responding to collaborative wiki and to prior individual essay questions in this course.

Early data only will be available for statistical analysis by November 2010. The study will continue over a 6-12 month period.

Limited work exists using wikis as evaluative tools in graduate education. Existing data is largely descriptive while this data would in fact yield numeric results with a large n of over 200 students/year enrolled in the DOC2 ambulatory medicine clerkship at OSUCOM.
28. Use of an Evidence-Based Physical Diagnosis Curriculum for Third-Year Medical Students
Kim Tartaglia, MD
Kimberly.tartaglia@osumc.edu

Objective: To determine if the use of an evidence-based physical diagnosis curriculum that focuses on multimedia and expert faculty instruction during the Internal Medicine inpatient clerkship results in an improvement in self-reported physical exam skills and an improved score on an observed structured clinical encounter (OSCE).

Methods: Students received one workshop and hands-on professor’s rounds that used multimedia and expert faculty demonstration to practice detecting abnormal physical exam findings. At the end of the clerkship, students were asked to retrospectively estimate their ability regarding examination of four organ systems prior to the clerkship and at the end of the clerkship using a 5-point scale. Additionally, students will be tested using a modified objective structured clinical examination that requires them to detect abnormal findings on standardized patients. However, the OSCE has not yet been implemented due to slow patient recruitment.

Results: To date, 33 students have completed the survey. For all organ systems assessed, students reported improved abilities at the end of the clerkship (mean improvement ranged from 1.06-1.54, p<0.01). On a 5-point Likert scale, students reported considerable improvement of their physical exam skills (mean 4.2, SD 0.739) and rated the workshop as a useful exercise (mean 3.54, SD 1.14).

Conclusions: Although conclusions cannot yet be drawn on the efficacy of an evidence-based physical diagnosis curriculum, preliminary data supports that students rated their skills higher after the physical diagnosis curriculum. Further study is needed to determine if the curriculum results in improved ability to detect abnormal physical findings on actual patients.

29. Survey of fellows perceptions regarding a nephrology fellowship orientation.
Kamadana S, Valentine C.

Christopher.valentine@osumc.edu

BACKGROUND: There has been no systematic evaluation of the adequacy of nephrology fellowship orientation practices in the United States.

OBJECTIVE: The aim of this survey was to evaluate the fellows’ impressions of adequacy of nephrology fellowship orientation at a university hospital.

METHODS: A new orientation program with 12 hours of didactic sessions and 2 hours of procedural training was instituted in July 2010. Prior to 2010 orientation consisted of 4 hours of didactics. A 7 item survey was created and sent to nephrology fellows who completed orientation before July 2010 (n=7) and during July 2010 (n=3). The July 2010 group had 3 months of clinical experience prior to the survey. There was an 80% response rate. A 5 point Likert scale was used. Topics included in the survey included acute kidney injury, chronic kidney disease, renal replacement therapy, vascular access, native renal biopsy, and native renal pathology.

RESULTS: The average final score from the old orientation was 20.6. The average final score from the new orientation was 26.3. For the new orientation, the rate of responses in the 1 to 2 range on the Likert scale was 0.33 per fellow. That rate was 2.4 per fellow prior to July 2010. Although the N is very small, this represents a trend toward higher satisfaction among the fellows.

CONCLUSION: The new orientation program resulted in a higher level of perceived preparedness for clinical duties. This is limited by a small number of responses. In addition, the time between orientation and survey was not uniform. We plan to continue to use this survey and make improvements to the orientation process based on the results.

30. “Pushing” the boundaries of technology in ultrasound education
David Bahner, MD, Nilesh Patel, Medical Student 4, Eric Adkins, MD, Chad Donley, MD, Nicholas Kman, MD

Objective: To demonstrate a novel ultrasound curriculum using “push technology” via Twitter to deliver high-yield content to mobile devices in real time.

Methods: A curriculum consisting of high-yield ultrasound concepts was developed and posted to a Twitter page every morning at 9am EST beginning on July 1st, 2010. Per Twitter guidelines, each post or “tweet” was limited to 140-characters. Students who signed up to the service received instant notifications “pushed” directly to their mobile devices following the posting of a new tweet. The curriculum is divided into categories covering essential ultrasound topics such as cardiac, critical care, and OBGYN which were
designed to mirror the honors ultrasound curriculum at The Ohio State University College of Medicine. The curriculum is supplemented by normal and pathological images as well as hyperlinks to helpful online resources.

**Results:** Daily “tweets” were posted each morning beginning on July 1, 2010. By September 30th, 2010 the number of tweets had reached 92 and the followers of the curriculum reached seventeen. Fourteen links to external pages were included within the curriculum, nine of which pointed to images created specifically for the course. The average tweet length was 131 characters.

**Conclusions:** Due to its ease of use and widespread applicability, Twitter is an excellent application of “push” technology as a means to deliver educational content. This pilot project has demonstrated the potential of Twitter to both supplement and enhance traditional educational methods. Further investigation is being conducted to evaluate the efficacy of this curriculum as a teaching tool.

### 31. The Tiered Mentorship Program in Emergency Medicine

**Objective:**
To provide a novel, multi-level, longitudinal mentorship program for medical students interested in the field of EM; thereby, preparing them for residency and, subsequently, a career in EM.

**Methods:**
This group mentoring model is designed to provide guidance to students of all levels. The student portion of the mentorship group will consist of the fourth year students enrolled in the Advanced Topics in Emergency Medicine (ATEM) course and the junior students participating in the Emergency Medicine Interest Group (EMIG). ATEM is a ten-month longitudinal elective designed to teach advanced concepts to students entering EM the following year. In our tiered mentoring model, ATEM students will act as mentors to junior medical students from EMIG.

The faculty and residents participants will act as mentors to all medical students. We hope to have one faculty member, one resident, and one fourth year ATEM medical student per mentorship group. 1st, 2nd, & 3rd year students are the primary protégé’s. Participants will attend meetings throughout the year and participate in clinical teaching and shadowing shifts in the ED. Meetings will focus on topics ranging from “How to successfully match in EM” to “Evidence-based Medicine in EM”.

Participants will be surveyed regarding their experience using a Likert scale. We will separately measure the junior medical students, ATEM students, and faculty member’s impressions of the program.

**Results:**
To be determined.

**Conclusions:**
Studies have shown that having a mentor correlates with greater success. We hope to show that a multi-level tiered mentorship program is appreciated by all participants.

### 32. Educational Value of an On-line, Digital, Self-Learning Histology Resource

**Objective:**
Decreasing student-instructor contact hours in higher education, combined with the digital proficiency of the new generation of students, necessitates the development of asynchronous, self-learning digital educational resources. In the past, histology laboratories utilizing microscopes and glass slides were considered to be an essential part of histology education. At The Ohio State University, medical and dental histology education does not include laboratory sessions, which may be a disadvantage in students’ comprehension and mastery of histology knowledge. To remedy this potential disadvantage, an on-line, question-driven, self-learning digital resource was created using a simple Microsoft PowerPoint application. The digital supplementary resource was made available to the first year dental students through the Carmen course contents page during the 2009-2010 fall and winter quarters. Statistical analyses reveal that 2009-2010 dental students’ practical performance was significantly higher for four out of six histology practical exams when compared to the matched practical scores from the 2008-2009 class, in which the digital resource was not available. Further, our student satisfaction survey on the digital histology resource revealed students’ desire for more tools such as this. Future plans include expanding the on-line histology resource by implementing an interactive virtual histology laboratory. A prototype of the virtual histology website will be demonstrated.

### 33. Does learning style predict performance in two distinct medical education curricula?

**Objective:**
Medical students at the Ohio State University College of Medicine choose one of two pathways for completing their basic science requirements in the first two years of medical school. The Integrated Pathway (IP) is a traditional program in which students learn the
subject material mostly from lectures and take examinations at regular intervals. The Independent Study Pathway (ISP) is a non-traditional program in which students independently study modules and progress at their own pace through the first two years of the curriculum. The goal of the present study was to assess whether readiness for self-directed learning predicts: 1) selection of one pathway vs the other and, 2) academic performance in the selected program. Thirty ISP students were matched with 30 IP students on the basis of undergraduate academics, gender, and ethnicity. All students completed a curriculum questionnaire and the Self-Directed Learning Readiness Scale assessment tool. Relationships among pathway selection and satisfaction, USMLE Step 1 score, and SDLRS score were analyzed by ANOVA and Multiple Linear Regression. Our data indicate that SDLRS is significantly correlated with pathway selection; ISP students scored significantly (p=0.007) higher on SDLRS than IP students. In contrast, there were no significant correlations between SDLRS and Step 1 scores regardless of pathway. We conclude that independent learners are more likely to select the ISP program rather than IP, but that academic success as measured by USMLE Step 1 involves a number of factors and cannot be predicted solely by readiness for self-directed learning.

34. How Can We Effectively Teach our Teachers? An Evaluation of the College of Pharmacy’s Annual Teaching Workshop

Pruchnicki M, Trinkley K, Khurma A, Rohdieck S, McAuley JW.

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Background: New pharmacy faculty and trainees in academic post-professional programs may have little formal instruction in educational pedagogy or teaching skills, but often are given significant teaching responsibility. This two-day Teaching Workshop (TW), which was established in 1989, is held annually, prior to the start of the academic year. It primarily provides pedagogical foundations and introductory skills for new teachers via sessions on teaching/learning styles writing objectives and syllabi, active learning, developing test questions, and assessment/course evaluation. The intended audience is graduate and postgraduate teaching assistants, new faculty, and student teachers. Though perceived as successful, the utility of individual topics/activities has not previously been evaluated.

Objective: To evaluate the 2010 College of Pharmacy’s Annual TW and identify areas for quality improvement.

Methods: A multiple-choice and short answer survey was delivered online (www.Qualtrics.com). All 38 attendees of the event were invited to participate.

Results: Nineteen attendees completed the survey (50% response rate). The majority (79%) were post-graduate year 1 pharmacy residents. Most indicated some prior teaching experience (mainly small group instruction) prior to the TW. Sessions related to planning/preparing for teaching were most valued. Many (84%) reported that their expectations were met by the TW. Nearly all (89%) stated that they are “very likely” or “likely” to attend ongoing monthly Teaching Roundtable discussions during the academic year.

Conclusions: New teachers valued the TW. Their feedback on specific topics and format will be used to inform future offerings. These findings should be applicable to other colleges or departments involved in teaching preparation.

35. Assessment of resident ability to identify and interpret pediatric breath sounds using a script concordance test

James Naprawa, MD, Dan Cohen, MD, David Way, Sorabh Khandelwhal, MD

GOAL: To test the validity of a script concordance test in assessing the ability of pediatric residents to: 1) recognize and interpret breath sounds in young children with respiratory distress and 2) manage respiratory problems in young children.

METHODS: An instrument validation study will be conducted. A script concordance test that incorporates recordings of pediatric lung examinations will be created.

Patients will be identified in the emergency department with the following findings on pulmonary auscultation: wheezes, rales, stridor, and tachypnea. The primary investigator will make a recording of the subject’s pulmonary exam using a Littman stethoscope. Recordings will be saved and edited using Stethassist software program.

The principal investigators will write a script concordance test. Test questions will focus on the diagnosis, workup, and management of four common pediatric respiratory disorders: asthma, bronchiolitis, croup, and pneumonia. Embedded in a number of these questions will be recordings of representative breath sounds.
Answer keys for the test will be created by administering the test to a panel of experienced pediatricians at Nationwide Children’s Hospital.

Pediatric residents will be asked to take the script concordance test during their rotation in the pediatric emergency department. Residents will receive the test via email. Residents will be informed that the test will have no affect on their summative evaluation.

DATA ANALYSIS: The reliability of the Script Concordance Test will be calculated with Cronbach’s alpha coefficients. Differences in performance will be analyzed using subject level of training. Analysis will be done using descriptive statistics and ANOVA analysis.

36. **Personality Trait Differences Between Surgical Residents, Nonsurgical Residents, Surgical Faculty, and Nonsurgical Faculty.**

Laura A. Peterson\(^1\), Rollin Nagel\(^2\), Mark W. Arnold\(^1\), Alan E. Harzman\(^1\), E. Christopher Ellison\(^1\), and Peter Muscarella\(^1\)

**Objective:** Previous research has demonstrated that personality traits predict leadership, motivation, and job performance. The Five-Factor Model (FFM) of personality may provide a useful framework to understand performance-related personality issues in academic medical settings. The FFM specifically evaluates individuals in areas of extraversion, agreeableness, conscientiousness, neuroticism, and openness to experience. We will examine the distribution of FFM personality traits among surgery residents, fellows, and faculty compared with internal medicine and family medicine residents, fellows, and faculty. **Materials and Methods:** Electronic survey requests will be e-mailed to all Faculty and Residents in the Departments of Surgery, Internal Medicine, and Family Medicine. Demographic data (specialty, level of training, gender, age, and length within the specialty) and Big Five Inventory (BFI) data will be collected through an internet-based survey tool (Survey-Monkey). Analysis of covariance will be used to examine specialty group differences in personality traits, controlling for desirable response bias. **Discussion:** We believe that there are personality trait differences between surgical and nonsurgical specialties. It is unclear whether these exist at the time of specialty selection or develop during specialty training. It is likely that personality changes may be encouraged during specialty training through implicit teaching. Age and attrition may also contribute to personality differences between these groups. Understanding personality differences between specialties may facilitate interpersonal interactions and improve patient care outcomes. Furthermore, personality profiling might be useful for selecting appropriate individuals for specialty training and might predict career success and job satisfaction.

37. **A Snap Shot of Pathology Education in U.S. Medical Schools**

Charles L. Hitchcock, M.D., Ph.D., Peter G. Anderson, D.V.M., Ph.D.

**Objective:** To access the variability in pathology education in preclinical and clinical medical school curricula.

**Methods:** Two survey monkeys were posted to the list serves of the Undergraduate Medical Education Division (MEDS) of the Association of Pathology Chairs, and to the Group for Pathology Education (GRIPE). Survey questions dealing with preclinical curricula included: type (traditional vs. integrated); primary teaching modalities (lecture and lab); group activities (CBL, TBL, and/or PBL), use of laboratory sessions; types of learning resources; and use of NBME shelf exams. Questions were also asked about clinical year electives in pathology and the number of students entering pathology.

**Results:** The first survey of 132 medical schools demonstrated that integrated preclinical curricula exceeds department-based curricula (70% vs 25%), with pathologist-only defined content occurring in 25% of the integrated curricula. As the primary teaching modality, lectures exceed group activities (66% vs. 18%). Initial results indicate that despite the fact that on average 3-4 students elect to match into pathology, up to 40 students per year elect to take a two to four week pathology rotation in their 3\textsuperscript{rd} and/or 4\textsuperscript{th} year.

**Conclusions:** This snapshot of medical school curricula focused on pathology education. Lectures remain the primary method of content delivery regardless of a traditional or integrated organization, but with a growing use of TBL, CBL and/or PBL activities to integrate the facts. The impact of changing preclinical pathology curricula and increased pathology rotations on medical students selecting pathology as a career is still unclear.

38. **An analysis of how Med-1 students evaluate lecturers in the Integrated Pathway curriculum at the Ohio State University College of Medicine (OSUCOM)**
Stanley I. Martin, Nicole Verbeck, David Way, John Davis, and Dale Vandre

**Objectives**

With the increasing availability of Powerpoint slides and audio recordings, student attendance at lectures is no longer necessary. The purpose of this study is to compare how students evaluate lecturers based on attendance. Academic achievement and lecturer background (clinical vs. basic science) are also analyzed.

**Methods**

We performed a retrospective review of faculty evaluations by the OSUCOM 2009-2010 Med-1 class. Students rated lecturers on a scale of 1-5. Ratings were compared using independent t-test, one-way analysis of variance and Pearson correlations.

**Results**

190 students performed 6,904 evaluations of 106 lecturers (Tables 1 and 2).

<table>
<thead>
<tr>
<th>Attendance</th>
<th>Evaluations</th>
<th>Mean</th>
<th>SD</th>
<th>t</th>
<th>df</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>5,237</td>
<td>3.90</td>
<td>0.93</td>
<td>-2.54*</td>
<td>3100.58</td>
</tr>
<tr>
<td>No</td>
<td>1,667</td>
<td>3.84</td>
<td>0.83</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>6,904</td>
<td>3.89</td>
<td>0.91</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p < .05

Students rated clinical faculty higher than non-clinical faculty (p<.001). Pearson correlation showed no relationship between class rank and ratings of lecturers (r=.027) or class rank and lecture attendance (r=.124).

**Conclusions**

As the focus of learning shifts outside the classroom setting, these data suggest it may affect how students value faculty members delivering content. Students rate clinical faculty higher than basic scientists. This may have ramifications for faculty undergoing promotion and tenure, and underscores the challenges in recruiting effective and interested basic science faculty in medical education.


Tatiana Motta, D.V.M., Mary Ann McLoughlin, D.V.M., Jennifer Au, D.V.M., Matthew Allen, Ph.D., Thomas Kerwin, Bradley Hittle, Michael Shah, and Don Stredney

Contact: Tatiana.Motta@cvm.osu.edu

2. Objective or purpose

This exploratory research involves the translation of technologies developed in human surgical simulation to emulate rigid endoscopy in veterinary orthopedics. The goal is to raise proficiency in technique prior to actual clinical performance. In doing so, the effort supports the reduction and replacement of animals in initial training, and furthers the refinement of alternative methods to animal use in surgical training.

3. Methods or Materials used

Data of the canine knee were obtained on the Siemens Inveon™ μCT imaging system used in the Small Animal Imaging Shared Resource at the Comprehensive Cancer Center of The Ohio State University Medical Center. This data was acquired at a resolution of 1024 x 1024 x 800 x 4 channels (RGBA) for a total of 2.36GB. Essential structures of the regional anatomy are segmented (i.e.,
delineated) using software from the Ohio Supercomputer center. A haptic device serves as a 3D positioning system for proper visual orientation (the arthroscope). A second haptic device is used to emulate the instruments used during arthroscopic surgery.

4. Results, if available
This effort is in its preliminary stages. Integration of veterinary data sets along with interface modifications that emulate arthroscopy are expected by late October, 2010. Formal presentation if the system will be conducted at the Veterinary Orthopedic Society Meeting in March 5 to 12, 2011 at Snowmass, Colorado.

5. Conclusions, including applicability to other schools or programs.
This effort is a direct demonstration of the translation of techniques being developed in human simulation to the field of veterinary orthopedic training.

A movie of the simulation is available for anonymous viewing at:
http://www.youtube.com/watch?v=nGcQ3LQLhks

40. A Synthetic Mouse Model for Learning Murine Anatomy and Procedural Technique
Don Stredney, Kimerly Powell Ph.D., Thomas Kerwin, Bradley Hittle, Chunming Chen, Philip Binkley, M.D., and Rebecca Jackson, M.D.

Contact: don@osc.edu

2. Objective or purpose
This exploratory research involves the translation of existing software in human surgical simulation and its modification for creating a synthetic murine data model for learning regional anatomy and procedural techniques. The long-term objectives are to advance the use of simulation technologies to provide best–practice methods for accelerating training, to integrate emerging computational models for training to optimize animal use, and to explore the extension of our methods to standardize training.

3. Methods or Materials
Whole-body isotropic µCT images of an adult mouse were obtained at approximately 60 microns (512x512x2000) using a Siemens Inveon™ µCT imaging system. Preliminary segmentation of the mouse skeletal anatomy using these images has been performed using VolEdit (OSC). Super resolution techniques were developed for creating an isotropic µMRI of mouse soft tissue structures at similar resolutions as the µCT data.

4. Results
The results of the skeletal segmentation can be viewed anonymously at
http://www.youtube.com/user/demiurge1776?feature=mhsn#p/u/6/IUcUxWeostw
To interactively render large data sets, we have implemented a volume renderer capable of handling large-scaled data sets. This renderer has been implemented using OpenCL

5. Conclusions
Super resolution techniques can provide reconstructions from three orthogonal 2D scans with similar delineation of structures and contrast-noise-ratios as a high-resolution 3D scan, however requiring 9.5 times less time.

Employing emerging imaging protocols makes it feasible to obtain high-resolution isotropic data sets that are necessary for accurately modeling murine anatomy. Subsequently, interactive simulations can be created and employed in training translational scientists in murine anatomy and procedural techniques.
The design elements of the new Clinical Foundations Curriculum meet several of the key findings recommended by the Carnegie Foundation for the Advancement of Teaching in their study *Educating Physicians*.

**42. Use of Standardized Pediatric Patients in Medical Education**

Michael R Kessel, MD and Daniel M Clinchot, MD

**Problem:**
Pediatric standardized patients have been shown to enhance the realism of clinical scenarios for medical education but little is known about their use.

**Methods:**
Website and telephone based surveys were completed with 100 out of 126 accredited medical schools on the use of pediatric standardized patients. Questions included in the survey: (1) Does your institution have pediatric standardized patients (under the age of 18)?; (2) If yes, what ages are included?; (3) What do the students think of the pediatric standardized patients?; and (4) How has the program worked?

**Results:**
Of one hundred respondents, fifty-five medical schools did not use pediatric standardized patients. Forty used pediatric standardized patients and five programs used children for physical examination demonstrations or something similar. Of these forty-five standardized patient programs, the most commonly used age group was the thirteen to eighteen year olds, second was the six to twelve year olds, and the least commonly used age group was the under six year olds. Problems associated with the use of pediatric standardized patients were: scheduling, workload, staying in character, behavior problems, liability, payment, legal and ethical issues.

**Conclusions:**
Many medical schools that use pediatric standardized patients have enjoyed great success with their programs. Strategies used by other medical schools include: recruiting children of physicians or staff members, working with homeschooled children, including parents in assessments of younger standardized patients, increasing the pay of parents, and limiting the number of consecutive sessions for the children.

**43. Millennial by Design: Cultivating Teamwork Skills**

Jill Clutter (jill.clutter@osumc.edu) and Georgianna Sergakis (georgianna.sergakis@osumc.edu)

Students in the course, Allied Medicine 670, Teamwork & Leadership in the Health Sciences, operate as ‘consulting teams’ for community organizations, using teamwork skills to analyze, strategize and develop projects to fulfill the described needs of the organization. The course design was based upon Wilson’s millennial adaptation1 of Chickering & Gamson’s principles of good teaching2. The undergraduate students in the course are representative of the Millennial generation and have unique characteristics which necessitate a re-invention of the educational paradigm. This involves a shift in the classroom to a learner-centered environment. This generation is also team-oriented and finds value in community service activities3. Millennial students training to be Allied Health Professionals should be prepared to function as a successful and active member of the healthcare team. Application of teamwork principles in the context of a service-learning experience allowed the faculty to meet these goals. The purpose of the study was to explore the effect of participation in the course with regard to the students’ attitudes toward teamwork and cultivation of teamwork skills. This poster will explore course construction, continuous improvement and research endeavors including changes in attitudes toward teamwork and qualitative data from focus groups conducted after course completion. In general, student attitudes toward teamwork were largely positive and improved following course implementation. This course design could provide an innovative model which could be duplicated for discipline-specific or interprofessional teams.


**44. Longitudinal Assessment of Empathy, Cynicism, Burnout, Stress, Cohesion, Psychological Safety, Learning Environment, Quality of Life and Residency Preference of Medical Students.**

Rollin W. Nagel, Catherine R. Lucey, Daniel M Clinchot, and David Way

**Purpose**
There is insufficient information about empathy and related constructs in medical school matriculates. When do students change from being empathic and humanistic to being cynical or do they? The purpose of this longitudinal assessment is to measure the level of
empathy, cynicism, burnout, stress, cohesion, psychological safety, learning environment, quality of life and residency preference as students progress through medical school.

**Method**
On-line assessments of OSU medical students using end-of-year (EOY) surveys and at entry are solicited. The surveys include student empathy, personal distress, and perspective taking (Interpersonal Reactivity Index), exhaustion, cynicism and personal efficacy (Maslach Burnout Inventory Student Survey), stress (Perceived Stress Scale), emotional climate, nurturance, student-student interaction, meaningful learning experience, flexibility (Learning Environment Questionnaire), cohesion (Perceived Cohesion Scale), 10-item Quality of Life, Psychological Safety, and top residency specialty choices. Two-way repeated measures ANOVAs have assessed changes among classes and across time.

**Results**
These assessment instruments have previously demonstrated reliability and validity. Currently two years of data from three classes at OSU have been collected. Many of the ANOVAs demonstrate significant interactions (P<.05; differences across time among classes). Example post hoc analyses for entry to EOY1 indicated significant (P<.05) increases in distress, stress, cynicism, emotional exhaustion, and personal efficacy. In addition, there was less exhaustion and more personal distress for EOY1 to EOY2.

**Conclusions**
Many of the analyzed differences were a result of changes from medical school entry to EOY1. Future EOY assessments may clarify class differences and be used to study the impact of major curricular changes.

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45. **Turning the Titanic: Changing the Culture of Professionalism in the Academic Medical Center**
Bryan L. Martin, D.O., FACP

Despite the fact that Medicine is considered one of the Learned Professions, there has been a long standing difficulty in describing exactly what medical professionalism is, and how to teach it. Much of what has been written on teaching professionalism has focused on methodology, but there is an increasing awareness of the need for teaching and evaluation of professionalism at all levels of medical care.

The initial focus on the teaching of Professionalism focused on the medical students. In 2003 the Accreditation Council for Graduate Medical Education (ACGME) included Professionalism as one of the six competencies required for all residents. In 2008 the Joint Commission issued Sentinel Event Alert Issue #40, which states that “There is a history of tolerance and indifference to intimidating and disruptive behaviors in health care. Organizations that fail to address unprofessional behavior through formal systems are indirectly promoting it.”

In the last several years the idea that Professionalism is both an institutional responsibility and an individual responsibility has gained traction, but an organized approach to the Problem of Professionalism is lacking. We describe an organized teaching methodology designed to help Academic Medical Centers approach professionalism across all aspects of the Medical Education Continuum. The initial phase of this project is to design a half day program that can be inserted into a National Education meeting and report on Ohio State’s successes in changing the culture of Professionalism within the medical center. The second phase of the project is to review survey responses to those who have attended the program to access their background, immediate response, and then what changes they have instituted at 6 months and one year.

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46. **Using Miller’s Triangle to Define the Level of Student Competence for the Core Educational Objectives of a Medical Curriculum**
Jennifer M. Burgoon and Cynthia H. Ledford

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A new medical school curriculum is being developed at The Ohio State University College of Medicine based on Core Educational Objectives (CEOs) agreed upon by the school’s Executive Curriculum Committee (ECC) in July 2008. To define the level of student competence required for each CEO at the end of Parts I, II, and III of the new curriculum, as well as at admission into medical school, common language was needed. The primary scheme used to define the level of competence was Miller’s Triangle (Miller, 1990). At the base of Miller’s Triangle is ‘knows’ or ‘knowledge’. This is the foundation of knowledge for the profession, which is measured through objective testing. Next, students progress to ‘know how’ or ‘competence’ where students learn to collect, analyze, and interpret information as represented through such activities as writing assignments and clinical cases. The next step is ‘shows how’ or ‘performance’ where students demonstrate their knowledge and understanding through performance when prompted to do so, while being observed, such as through an Objective Structured Clinical Examination (OSCE) or standardized patient (SP). At the top or pinnacle is ‘does’ or ‘action’, where students do not perform when prompted to do so, but instead act independently and are evaluated by such assessment tools as a mini-clinical exercise (mini-CEX) or direct observation of competence (DOC). With this
design, students are expected to demonstrate a progression of competence throughout medical school, as students will be required to reach ‘does’ on most of the CEOs by the end of Part III (i.e. at graduation).


47. Interprofessional Professionalism Behaviors in Healthcare Professions

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BACKGROUND: A group of over ten healthcare disciplines embarked on a journey to define interprofessional professionalism behaviors in 2006. These behaviors will help guide professions to understand the impact of collaborative work as well as improve patient care. OBJECTIVES: A set of over forty behaviors were used to define interprofessional professionalism. These behaviors focus on major themes such as communication, ethics, excellence, and respect to name a few. METHODS: Conference calls and meetings took place since 2006 to define interprofessional professionalism that is applicable to all healthcare professions. A pilot survey was performed in various professions to determine applicability to various professions as well as the ability for participants to understand the concept. There may be more pilot surveys for newly represented professions in the future. RESULTS: After the pilot survey, the group realized a need to reduce redundancy and enhance clarification between interprofessional professionalism and professionalism. The pilot survey also revealed the need to adjust wording so that each item can be used optimally by various professions that deal with different aspects of healthcare such as veterinary medicine and physical therapy for example. CONCLUSIONS: The topic of interprofessional professionalism is important to all professions and its impact can be seen on the improvement of healthcare education and patient care. Collaboration and cooperation will lead to safety and quality for optimal healthcare.

48. The Use of Problem Based Learning for Pediatrics in a Doctoral of Physical Therapy Program

Jill C. Heathcock, MPT, PhD and Dale Deubler, PT

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2. Objective or purpose: Life-long learning is one of the hallmarks of a health care professional. Problem-based Learning (PBO) fosters the development of life-long learning skills through the use of self-learning methods. Students take ownership for their learning through constant engagement with each step of the process. When well designed a PBL course will help students meet the core objectives of professional education programs that include the development skills needed to organize new and previously learned information in ways that are clinically applicable, the maturation of clinical reasoning abilities and the application of self-directed learning strategies.

3. Methods: A case-based pediatrics modified PBL curriculum for doctor of physical therapy students was implemented. Students were assigned to small groups of 8 students based on learning styles (Bloom’s Taxonomy) and gender. Each group participated in small PBL groups for 6 hours over 8 quarter weeks. Outcome measure are compared to previous physical therapy students who received a didactic curriculum.

4. Results: Pass rate on national board exam, standardized comprehensive exam (pediatric content), performance on pediatric clinical rotations, job selection, and student satisfaction will be discussed.

5. Conclusions: PBL offers students and facilitators a unique way of learning pediatric material. When combined with laboratory and clinical experiences it may add to the goal of life-long learning for health care professionals and may increase interest and expertise in pediatrics. This curriculum design could be used in other health-related professions such as occupational therapy, nursing and speech pathology.

49. Interprofessional education in the internal medicine clerkship: Results from a national survey.

Beth W. Liston MD, PhD, Melissa A. Fischer MD, Med., David Way Med, Klara Papp PhD, Dana Torre MD

Purpose: Growing data support interprofessional teams as an important part of medical education. This study describes attitudes, barriers and practices regarding interprofessional education (IPE) in internal medicine clerkships in the United States and Canada.
Methods: In 2009, a section on IPE was included on the Clerkship Directors of Internal Medicine (CDIM) annual survey. This section contained 23 multiple choice questions exploring both core and sub-internship experiences. Data were analyzed using descriptive statistics and Rasch analysis.

Results: Sixty-nine of 107 institutional members responded to the survey (64% response rate). Approximately 68% of clerkship directors believe that IPE is important to the practice of internal medicine. However, only 56.5% believe that it should become a part of the undergraduate clinical curriculum. The three most significant barriers to IPE in the IM clerkship were: *scheduling alignment, time in the existing curriculum, and resources in time and money.* Although more than half of respondents felt IPE should be included in the clinical curriculum, 80.9% indicated that there was no formal curriculum on IPE in the core IM clerkship and 83.8% indicated that there was no formal curriculum during IM sub-internship rotations at their institution.

Conclusions. There is limited penetration of IPE into one of the foundational clinical training episodes for medical students in USMLE accredited schools. This may be related to misperceptions of the relative value of these experiences and limitations of curricular time. Learning in and from successful models of interprofessional teams in clinical practice may help to overcome these barriers.

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50. Exploring the Emotional and Social Competencies of Pediatric and Medicine-Pediatric Residents

Javed Sayed BS, John D Mahan MD, Robert Towner-Larsen PhD, Jordanna Tomblin MA, David Wey MS, Jonathan Thackeray MD, Rajesh Donthi MD, Scott Holliday MD, Terry Davis MD, and Rick McClead MD.

**John.Mahan@nationwidechildrens.org**

Aim: The emotional and social competencies of individuals have been termed emotional intelligence (EI). EI has a profound effect on ability to interact, to work effectively with others and in teams and to provide care in the modern medical environment. Exploring the EI of pediatric (P) and medicine-pediatric (M-P) residents may provide insights into the capabilities of young physicians early in training and opportunities for directed growth.

**Methods:** 32 P and 8 M-P first year residents completed the HAY Emotional and Social Inventory (ESCI) 2.0, a 360° evaluation that has been validated as a method to define EI in individuals by assessing 12 distinct emotional and social competencies. The assessment was performed in conjunction with a team and leadership development program provided to our residents in the last year.

**Results:** P and M-P residents were rated highest in Organizational Awareness, Teamwork and Achievement Orientation by the other raters and lowest in Coaching and Mentoring, Inspirational Leadership and Conflict Management by the others. For all but one competency (Inspirational Leadership) the others rated the residents higher than the residents rated themselves.

**Conclusion:** The ESCI 2.0 provides opportunities for residents to assess their own personal EI in terms of strengths and weaknesses. Such information should prove valuable for directed personal development, addressing resident self-efficacy and tailoring team and leadership training to resident needs. The ultimate outcome should be young physicians with better resiliency and higher EI – more effective physicians.

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51. A Comprehensive Plan for Helping Children Avoid Obesity - Pilot Study

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**Purpose:** Primary care clinicians, despite regular access to young families, lack a cohesive model for approaching office visits regarding excess weight. An Expert Committee representing 15 national organizations recently provided recommendations for clinicians on the standard of care for managing childhood obesity. This Expert Committee Recommendations (ECRs) emphasize prevention, regular screening, and initial intervention for excess weight and its co-morbidities. Although these guidelines offered direction on what to target, they did not specify how.

**Methods:** We developed high quality intervention tools for use by clinicians to direct behavior modification, providing a template for intervention for school-age children. The *Comprehensive Plan for Obesity Intervention* was implemented in three phases. First, we piloted modular counseling sessions and resources among clinicians in the Nationwide Children’s Hilltop Primary. Second, we established a direct referral process linking the school nurses with the affected child’s primary care physician. Third, we established connections with community education programs, providing supplemental counseling for referral families.

**Results:** We have interviewed 51 families on office visits. The feedback we obtained guided development of office visit modules and materials. On average, motivated families that returned to the clinic needed to complete only three to four modules, setting two goals per visit, to successfully incorporate the recommendations into the child’s daily life. Of families that returned for follow up visits 42%, 53%, and 5% of families completed two, three, or four office visits, respectively. Weight maintenance or weight loss occurred in 57% of patients, with an average weight loss of 1.00 kilogram.
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Background: Patient handoffs are incredibly common in medicine and are associated with errors that have significant impacts on patient safety. While interns assume many of the responsibilities of these important transitions of care in teaching hospitals, few curricula exist to teach these important skills. An educational intervention that is easily administered and improves handoff quality in multiple different settings is needed. In order to address these issues, educators at the Northwestern University Feinberg School of Medicine developed a web-based curriculum on patient handoffs and discharge summaries for beginning interns. Although initial data at Northwestern are encouraging, the generalizability of the curriculum and its impact on the quality of handoffs has not yet been established. In order to assess the efficacy of this educational intervention, educators at Northwestern and the Ohio State University (OSU) began a collaborative study.

Methods: All 4th year medical students completing a sub-internship in any specialty during a six month time period at OSU received one of the following curricula based on the month of the academic year. In the traditional curriculum, students were required to complete readings on care transitions. Handoff teaching was left to the discretion of the sub-intern’s team (typically the ‘see one, do one, teach one’ method). In the intervention curriculum, students were required to complete 10 web-based, independent learning modules in addition to available readings. During the last week of the rotation, all students were required to complete a knowledge post-test, a confidence survey and to submit 3 discharge summaries and 3 handoff notes which were scored using a standardized scorecard.

Results: We hope to demonstrate that this independent learning tutorial increases learner knowledge, trainee satisfaction with their understanding of the handoff process, and has a measurable impact on the quality of handoffs across multiple institutions and specialties.

53. Resident AVATARs: Using Second Life Virtual Simulation Environment for Mock Oral Emergency Medicine Examination
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Objectives: Oral examination is a method used to evaluate emergency medicine (EM) residents and is a requirement for board certification of EM physicians. Second Life is a virtual 3-D immersive learning environment that has been used for medical education. A Virtual Advanced Testing Alternative for Residents (AVATAR) is a pilot hypothesis-generating project evaluating the feasibility of utilizing Second Life simulation technology to administer mock oral examinations to EM residents.

Methods: EM residents participate in mock oral examinations in a traditional format conducted face-to-face with a faculty examiner. All current residents were invited to participate in a similar case scenario conducted via Second Life. In this pilot project, the examinee managed the case while acting as the physician avatar and communicated via headset/microphone from a remote computer with a faculty examiner who acted as the patient avatar. Participants were surveyed regarding their experience with the traditional and virtual formats using a Likert scale.

Results: 27 EM residents participated in the virtual oral examination. None of the examinees had used Second Life previously. Second Life proved easy for examinees to log into (92.6%) and navigate (96.3%). All felt comfortable communicating with the examiner via remote computer. Most examinees thought the Second Life encounter was realistic (92.6%) and many found it more realistic than the traditional format (70.3%). All examinees felt that the virtual examination was fair, objective, and conducted efficiently. A majority preferred to take oral examinations via Second Life over the traditional format and expressed interest in using Second Life for other educational experiences (66.6% and 92.6%, respectively).

Conclusions: Second Life simulated oral examination is a feasible alternative to traditional mock oral examinations for EM residents.

54. Education in a Comprehensive Transplant Center: A Multidisciplinary, Interprofessional Approach and Patient-Centered Outcomes
Abstract

Introduction: Education efforts specific to transplant activities have lagged behind educational efforts in many other areas of medicine. Patient education particularly has enjoyed little attention and systematic evaluation. Study Design: As a part of a larger educational initiative within our Comprehensive Transplant Center, patient education was targeted for focused review and revision. An interprofessional, multidisciplinary committee was assembled to take inventory of all current educational activities targeted at patients undergoing evaluation for transplantation. The material was reviewed for content accuracy, and for completeness as determined by independent patient and professional needs assessments. An assessment tool was developed to measure knowledge acquisition by patients from the educational activities, and includes a measure of health literacy. This tool will be administered in pre-/post-test fashion to patients undergoing pre-transplant educational activities at the transplant clinic. Results: Data to be gathered include test scores, standard demographic data (as required for reporting to federal agencies) and measures of the primary and secondary outcomes -- graft survival (at 1 and 6 months) and episodes of rejection (at 1 and 6 months), respectively. Data will be analyzed for correlation of test scores with the primary or secondary outcomes, independent of other known predictors of outcomes. Conclusions: The creation of a multidisciplinary, interprofessional group focused on education within the transplant realm has facilitated review of patient-centered educational material and the creation of an assessment tool that can be used to measure effectiveness in the pre-transplant educational setting of further educational interventions at all levels.