



2015 Spring Conference Program

Collaborating to Train Tomorrow's Physicians

April 9-12, 2015

Jointly hosted by

*Association of American Medical Colleges Central Group on Educational Affairs,
Central Group on Student Affairs, and
Central Organization of Student Representatives*

The Ohio State University School of Medicine



And Co-sponsored by

The University of Cincinnati School of Medicine



**Conference activities will be conducted at the
Hilton Columbus Downtown
401 N High Street**

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Target Audience

This program will be of interest to educators and administrators participating in undergraduate and graduate medical and professional education and training.

Educational Objectives

Upon completion of this educational activity, participants should be better able to:

- 1) Discuss the benefits associated with an integrated and more seamless approach to the continuum of health professional education.
- 2) Design and implement strategies for effectively educating healthcare professionals in alignment with overarching healthcare improvement initiatives.
- 3) Describe current research and emerging tools and techniques designed to appropriately position and advance the medical education profession.
- 4) Identify a variety of best practices in the field of medical education and seek to effectively integrate innovative solutions into your medical education setting.
- 5) Build a network of colleagues available to engage in on-going discussions and idea generation surrounding education issues and challenges.

Program Planning Committee

Mary Anderson, MD

Program Chair

Rush Medical College

Caren M. Stalburg, MD, MA

Program Co-Chair

University of Michigan Medical School

S. Beth Bierer, Ph.D.

MESRE Chair

Cleveland Clinic Lerner College of Medicine
of Case Western Reserve University

Elizabeth R. Ryan, Ed.D.

Program Committee

Northwestern University Feinberg School of Medicine

Gerald J. Yutzenka, Ph.D.

Program Committee

Sanford School of Medicine of The University of
South Dakota

Janice Farlow

Program Committee

Indiana University School of Medicine

Quinn Capers IV, MD

Program Chair

The Ohio State University College of Medicine

Toshi Uchida, MD

Program Committee

Northwestern University Feinberg School of Medicine

Angela Nuzzarello, M.D., MHPE

Program Committee

Oakland University William Beaumont School of
Medicine

Aurora Bennett M.D

Program Committee

University of Cincinnati College of Medicine

Daniel London

Program Committee

Cleveland Clinic Lerner College of Medicine of Case
Western Reserve University

Jeff Zabinski

Program Committee

Boonshoft School of Medicine at Wright State
University

Plenary Speakers

William O. Cooper, MD, MPH

William O. Cooper, MD, MPH, is a practicing physician, researcher, teacher, and administrator. He has led School of Medicine programs, including the Center for Patient and Professional Advocacy, the Master of Public Health Program and the Pediatrics Office for Faculty Development. He is an internationally recognized expert in medication safety in children. The results of his research, published in journals including *New England Journal of Medicine* and *JAMA*, have led to changes in policy for prescription drugs at the US Food and Drug Administration, Health Canada, and the European Union and have influenced prescribing practices for multiple specialties, including pediatricians, obstetricians, and psychiatrists. He has served as a member of the Food and Drug Administration's Drug Safety and Risk Management Advisory Committee and recently provided testimony to the US Senate Committee on Health, Education, Labor, and Pensions on the use of psychotropic medications in children.



In his role as Director of Vanderbilt's Center for Patient and Professional Advocacy, Dr. Cooper oversees the operations of the centers PARS program, education and training, and research programs. Prior to his appointment as Director of the Center, Dr. Cooper was a faculty messenger and in his role as Vice Chair participated in developing remediation plans for faculty who required higher level interventions from the Center; all have successfully completed the remediation plans and are currently productive faculty members. He has lectured throughout the country on faculty development and professionalism and is recognized for his innovative approach to teaching.

Dr. Cooper received an M.D. degree from Vanderbilt University School of Medicine in 1991 and completed residency and chief residency at Cincinnati Children's Hospital. He returned to Vanderbilt for General Academic Pediatrics fellowship, where he obtained an MPH before joining the Vanderbilt faculty in 1997. He has won numerous teaching awards and was selected for Vanderbilt's Academy for Excellence in Teaching in 2010.

Patricia S. O'Sullivan Ed.D.

Patricia S. O'Sullivan is Director, Office of Research and Development in Medical Education at the University of California, San Francisco School of Medicine. At UCSF she co-directs the Teaching Scholars Program and oversees the masters and doctoral programs in health professions education given in association with other institutions. She leads efforts in faculty development and educational research for UCSF. She has over 35 years of experience in medical and health professions education. Much of her research has focused on assessment both at the undergraduate and graduate level. Her studies on the use of portfolios for assessment, initially funded by the Stemmler Fund of the National Board of Medical Examiners, have expanded to include assessing reflective ability and align naturally with Entrustable Professional Activities. Recently, she has focused on research in faculty development. Dr. O'Sullivan has chaired the Research in Medical Education (RIME) Section of the Association of American Medical Colleges, the RIME Program Planning Committee and the Division for Professions Education of the American Educational Research Association. Dr. O'Sullivan has undertaken educational research studies with health professionals in medicine, nursing, pharmacy, and health related professions. Her work has been recognized as a Fellow of the American Educational Research Association (AERA), the 2011 recipient of the Merrill Flair Award of the Association of American Medical Colleges Group on Educational Affairs and the 2014 Distinguished Career Award for the Division in Professions Education of AERA.



Central Group on Educational Affairs and Central Group on Student Affairs Disclosure Policy

It is the policy of the Central Group on Educational Affairs and Central Group on Educational Affairs to abide by the standards set forth by the Accreditation Council for Continuing Medical Education (ACCME) Standards for Commercial Support of Continuing Medical Education. Even though we are not offering CME (or AMA PRA category 1) credit for this educational activity, we still strive to ensure balance, independence, objectivity, and scientific rigor in all of its activities.

To help achieve that objective, all persons involved in the planning/content development are expected to disclose all relevant financial relationships with pharmaceutical companies, biomedical device manufacturers or distributors, or others whose products or services may be considered related to the subject matter of the educational activity. Disclosure of these relationships will be included in all written activity materials, and mentioned verbally at the activity so that participants may formulate their own judgments in interpreting content and in evaluating recommendations.

Acronyms Glossary

GEA	Group on Educational Affairs
GSA	Group on Student Affairs
OSR	Organization of Student Representatives
CME	Continuing Medical Education
GME	Graduate Medical Education
IME	Innovations in Medical Education
MESRE	Medical, Education, Scholarship, Research, & Evaluation (was RIME)
SIG	Special Interest Group
UGME	Undergraduate Medical Education

Driving Directions to the Hilton Downtown Columbus

From 71 South (Coming from the North)

- Take exit **109A** for **I-670** toward **Dayton**
- Keep right at the fork and merge onto **I-670 W**
- Take the exit on the left toward **Convention Center Dr**
- Turn right onto **Convention Center Dr**
- Take the 1st left onto **E Goodale St**
- Take the 1st left onto **N High St**
The Hotel will be on your right

From 71 North (Coming from the South)

- Take exit **106A-106B** on the left to merge onto **OH-315 N** toward **Worthington**
- Take the exit onto **I-670 E**
- Take exit **3** for **Neil Ave**
- Turn right onto **Neil Ave** Turn left onto **Vine St**
- Turn right onto **N High St**
The Hotel will be on your right

From 70 East (Coming from the West)

- Slight left onto **I-670 E** (signs for **Airport**)
- Take exit **3** for **Neil Ave**
- Turn right onto **Neil Ave**
- Turn left onto **Vine St**
- Turn right onto **N High St**

The Hotel will be on your right

From 70 West (Coming from the East)

- Take exit **101A** to merge onto **I-71 N** toward **US-40/Broad St/Cleveland**
- Take the exit on the left onto **I-670 W**
- Take exit **3** to merge onto **W Goodale St** toward **Neil Ave**
- Turn left onto **Neil Ave**
- Turn left onto **Vine St**
- Turn right onto **N High St**

The Hotel will be on your right

Future meetings:

CGEA 2016 – April 7-9 University of Michigan, Ann Arbor Michigan

Wednesday, April 8, 2015

12:00 am – 5:00 pm **REGISTRATION**

Pierce A/B
Prefunction Lobby

PRE-CONFERENCE Workshops

1:00 am – 4:00 pm **LEADERSHIP EDUCATION AND DEVELOPMENT (LEAD)**

Hayden room

(closed session for LEAD Fellows only)

Thursday, April 9, 2015

7:00 am – 5:30 pm **REGISTRATION**

Pierce A/B
Prefunction Lobby

8:00 am – 12:00 pm **PRE-CONFERENCE Workshops**

Hopkins

Medical Education Workshop

Hayden

Clerkship Administrators Certification Workshops

King

LEADERSHIP EDUCATION AND DEVELOPMENT (LEAD)

(closed session for LEAD Fellows only)

9:00 am – 10:30 am **CGSA Executive Committee Meeting**

Pierce A

(closed session)

9:00 am – 12:00 pm **Medical Education Research Certificate (MERC) Workshop**

Pierce B

10:30 am – 12:00 pm **Curriculum Inventory Workshop**

Pierce A

LUNCH (on your own)

PRE-CONFERENCE Workshops

1:00 pm – 4:00 pm **Medical Education Research Certificate (MERC) Workshop**

Pierce B

1:00 pm – 3:00 pm **CGSA Boot Camp**

Pierce A

Aurora Bennett, Daniel Burr, Christina Grabowski, Damien Ihrig, Wanda Lipscomb, Lina Mehta, Lisa Moscoso, Anita Pokorny.

Methods/Session Format: 2-hour session consists of 45 minutes of brief presentations from staff in Student Affairs, Admissions, Diversity, Financial Aid and Student Records followed by 1-hour of small group break-outs in these same areas. There will be a 10 minute wrap-up to discuss best avenues for providing ongoing mentoring for new CGSA members.

Objectives: 1. Provide an overview of the AAMC Group on Student Affairs (GSA). 2. Describe the core responsibilities of the roles held by staff in Student Affairs. 3. Recognize the interface among the various staff roles in serving students' needs. 4. Identify the key interaction points that staff have with students along their educational continuum.

Rationale: Student Affairs offices across medical schools can vary widely in their organizational structures and range of services provided to students. This session will provide an informative and interactive opportunity for our members to learn about core responsibilities of various Student Affairs roles; key resources and guidelines for Student Affairs staff and opportunities for professional growth within Student Affairs. In addition, the session will offer an overview of the AAMC Group on Student Affairs (GSA) and the multitude of helpful resources it makes available on both the national and regional level.

1:00 pm – 2:30 pm

Hopkins

MedEdPORTAL Workshop

3:00 pm- 4:00 pm

Pierce A

Resource Exchange:

Match Advising: Proactive Approaches to Optimize a Successful Match

Bennett, Aurora, University of Cincinnati, Pokorny, Anita, Northeast Ohio Medical University (NEOMED)

Objectives:

1. Identify new formats for providing Match advising.
2. Discuss strategies aimed at advising students who are less competitive for their desired specialties.
3. Describe steps that can be taken to monitor and intervene when students are receiving less than an optimal number of interview invitations.

Rationale: This session will provide a highly interactive opportunity for attendees to share innovations and resources being used at their home institutions to advise students in the changing Match environment. Preparing students to approach the Match with an informed and proactive approach has become an increasingly challenging process regardless of specialty choice and of student academic profiles. In response to these concerns, a growing national conversation has been occurring to share best ideas for advising students in this evolving climate. This session is intended to engage the attendees in a highly interactive discussion about the strengths and limitations of the various formats being used across institutions.

Official Conference Activities Completed for the Day

Please see the "Columbus Visitors Guide"

**CGEA EXECUTIVE COMMITTEE MEETING
(closed session)**

5:00 pm – 7:30 pm

Hayden

5:00 pm –7:30 pm

Hopkins

**CENTRAL REGION DIVERSITY AFFAIRS REPRESENTATIVE
MEETING**

Friday, April 10, 2015

7:00 am – 5:30 pm **REGISTRATION**

*Bellows Prefunction
North*

7:00 – 8:00 am **BREAKFAST**

Bellows A-C

8:00 – 9:00 am **Plenary**

Bellows A-C

Creating a Culture of Accountability in a Learning Environment

William O. Cooper, MD, MPH

Cornelius Vanderbilt Professor of Pediatrics

Vice Chair for Faculty Affairs, Department of Pediatrics

Professor of Preventive Medicine

Director, Center for Patient and Professional Advocacy

9:00 – 9:30 am **BREAK**

9:00 am – 1:00 pm **POSTER SET UP**

Bellows DEF

Poster presenters should hang their posters before 1:00 pm

9:30 – 11:00 am **CONCURRENT SESSIONS**

Burkhart A

MESRE Oral Abstract Presentations Session: Instruction

(Presentations are allotted 15 minutes)

Moderator: Toshi Uchida, MD, Northwestern University

1. Physical Findings Progress Test at a Medical School

Han, Heeyoung, Southern Illinois University

2. Development and evaluation of a vertically integrated on-line radiology curriculum

Lim-Dunham, Jennifer, Loyola University

3. A Self-Directed Preclinical Course in Ophthalmic Surgery

Wu, Dominic, Alpert Medical School of Brown University

4. CEPAER (Core Entrustable Professional Activities for Entering Residency): Perspectives across the Continuum

Farnan, Jeanne, University of Chicago

Burkhart B

The M4 Mock Residency Interview: Three Medical School Models

Brown, Rachel University of Missouri, Beucke, Nathan. University of Missouri,

Hampel, Paul, University of Missouri, Carrott, Alice, University of Kansas,

Wolanskyj, Alexandra, Mayo

Objectives: The objective is to present three successful mock interviewing models that provide a framework for which to prepare students for the

residency interview. Features include how to: Identify available resources and feasibility of implementation, survey student interest and manage scheduling, determine necessary staff and process of training mock interviewers and observers, develop structure – how many and length of interviews, feedback method, CV & PS review, interview questions, standardize forms and feedback, collaborate with departments and simulation center

Rationale: With increasing class sizes and stagnant growth in graduate medical education positions the residency match process becomes more competitive each year putting students who are unprepared for interview day at a distinct disadvantage. The results of the 2014 NMRP Program Director survey for all specialties show that 93% of programs rate interactions with faculty during interview and interpersonal skills as the two top factors when developing their rank order list. Medical schools are forced to meet the challenge of preparing their students for the residency interview. Learning to interview confidently requires practice and feedback. The University of Missouri, University of Kansas, and Mayo offer unique mock interviewing opportunities for their M4 students. A review of these residency mock interview models, all of which require collaboration across departments, will inspire other medical schools to evaluate their methods for preparing students for interview season.

Hopkins

COSR Business Meeting

King

Identifying Strategies to Standardized the Curriculum and Assessment of Core Clerkships based on the Physician Competency Reference Set (PCRS) to Verify Entrustment of Core Professional Activities

Pamela Baker, Ph.D., Laura B. Lukin, Ph.D., Robert Neel, MD, University of Cincinnati

Objectives:

- 1) Identify the PCRS competencies that are currently addressed in each Core Clerkship.
- 2) List and describe current assessments used.
- 3) Compare the commonalities in competencies and assessments across all Core Clerkships.
- 4) Determine which PCRS expectations should be addressed in all core clerkships.
- 5) Standardize and align the assessment tools that will be used to verify entrustment.

Rationale: We are proposing a 90-minute session to help medical colleges standardize the curriculum and assessment of their Core Clerkships based on the Physician Competency Reference Set (PCRS) and the associated Entrustable Professional Activities (EPA's). In an effort to better prepare medical school graduates for their residency programs, the AAMC has identified thirteen Core Entrustable Professional Activities that define a common set of integrated competencies or behaviors that all residents should be able to perform the first few weeks of their program without direct supervision (AAMC 2014). The expectation is that within 10 years, LCME accredited institutions will have aligned their curricular structures with the EPAs and will have implemented learning experiences and assessment strategies that verify entrustment. While the AAMC only identified 10 U.S.

institutions to formally participate in the initial program (chosen from 70 applicants), they are encouraging broader participation through i-Collaborative, a service of MedEdPortal, that provides educators with a platform to share innovations in medical education (AAMC 2014).

In light of recent sweeping curricular changes in LMCE accredited medical education programs, the EPAs provide an opportunity for medical schools to (1) examine how well their revised curricular structures align with the EPAs and associated competencies defined by the AAMC, (2) evaluate whether their current curricular structure provides the required learning experiences that will lead students to entrustment, (3) determine if these learning experiences occur at appropriate points in the curriculum, and (4) identify assessments that can be used to verify entrustment. Specifically, this session will provide participants with a framework to identify common competencies as well as specific assessment strategies and tools that can verify entrustment.

Building on the work of Englander (Englander & Carraccio, 2014) and ten Cate (O. ten Cate, 2013a, 2013b, O. ten Cate & Billett, 2014, O. ten Cate, et. al, 2010), Backward Design (Wiggins and McTighe 2005. Walvoord, 2010. Fink 2014.) identifies a process that medical colleges can utilize to create an assessment plan framework to achieve curricular outcomes. Specifically, Backward Design begins with articulating what students should be able to do or understand upon completion of a program (in this case EPAs and associated PCRS expectations) and then moves to identify what students would need to do to demonstrate to faculty that they achieved the learning outcomes (entrustment). The third step is to identify the learning experiences that students would need during the course of a program in order to do well on these assessments (Fink 2013). Backward Design is particularly well-suited to help achieve standardization across the core clerkships, while at the same time providing a framework to allow specialties to address and assess competencies beyond the foundational level. This interactive session will walk participants through the following process: 1) identify the PCRS expectations that are currently addressed in each Core Clerkship; 2) list and describe current assessments used; 3) compare the commonalities in competencies and assessments across all core clerkships; 4) determine which PCRS expectations should be addressed in all core clerkships; 5) standardize and align the assessment tools that will be used to verify entrustment. Upon completion of this workshop, participants will leave with the tools and resources (in the form of a workbook) necessary to lead a similar activity with colleagues from their home institutions.

Pierce A

Embedding Professionalism Across the Continuum: Perspectives from Student Affairs and Medical Education

*Carol Hasbrouck, Imran Ali, MD, Yvette Perry, PhD, Marcus Sinewe, M4
University of Toledo College of Medicine*

This session will focus on joint efforts of UT's Offices of Student Affairs (OSA) and Medical Education (OME) to foster and maintain a culture of professionalism. The OME perspective will include: curriculum initiatives; professionalism policies implemented to establish standards for both students and faculty; and methods used to collect data. Professionalism outcome information and data are collected from multiple sources, including evaluation forms, learning environment surveys, AAMC GQ, graduation surveys, professionalism behavior reports, and most notably the learning environment dashboard, one of the most unique features of UT's efforts to monitor the

learning environment. The real-time learning environment dashboard is accessible online 24/7 for all students to report anonymously any mistreatment they have personally experienced, as well as perceived mistreatment of others. Individuals involved and the exact location/training site of the perceived mistreatment can be specified. OME monitors the dashboard at least weekly. Most events are laudatory and are shared with the appropriate faculty, residents, and administrators. Negative comments are investigated expediently and appropriate actions taken. The OSA is involved in efforts to promote professionalism and is working to refocus signature events (e.g., White Coat Ceremony) and nominations processes (AOA, GHHS) to make them less about entitlement and celebration and more about committing to professionalism. Whether ceremonies may be contributing to a climate of non-professionalism instead of creating the high professional ideals and values desired for physicians-in-training will be examined. OSA has attempted to reframe these ceremonies to focus more on professionalism and a commitment to high standards as part of the medical profession's contractual obligations to society by involving more students in planning & executing ceremonies, selecting event speakers who explicitly address student professionalism, right-sizing expenses, eliminating gifts, and adapting messaging to de-emphasize celebration and emphasize personal responsibility. Formal evaluations of the events have been conducted. Anecdotal evidence suggests that there are challenges to changing the culture of these events; however, some feedback suggests that these changes are beginning to help transform the culture.

A student panelist will describe how students are engaged in promoting professionalism and how the Student Honor Board operates.

Pierce B

Engaged Learning it's more clear with a peer!

*Roman, Brenda, Rich, Mark, Kohlhepp, Teresa, Smith, Aaron Boonshoft
School of Medicine Wright State University*

Objectives: After attending a faculty development session by Eric Mazur, several faculty members began utilizing peer instruction as an instructional method at the Boonshoft School of Medicine. In this session, there will be an overview of peer instruction, with demonstration of the technique using the audience response system with the participants in this workshop as the learner group. With two years of experience, we feel confident in what works well from a faculty and student perspective in utilizing peer instruction as an engaged learning technique. We will share data about nongraded versus graded peer instruction sessions, as well as our document of "best practices." At the end of the session, participants will be able to:

1. Define peer instruction
2. Learn effective techniques in facilitating a peer instruction session
3. Identify effective uses of peer instruction within the medical school curriculum
4. Identify the technological and staff support necessary to carry out this mode of instruction

Private Dining Room

How to Write a Competitive CGEA Mini-grant Proposal

S. Beth Bierer, PhD, Anna Cianciolo, PhD

Panelists

Dorothy Andriole, MD
Cynthia Ledford, MD
Beth Liston, MD, PhD

Each year, the CGEA awards up to \$5,000 to support educational research carried out by new or experienced investigators affiliated with a CGEA medical school. The call for proposals has been posted to CGEA website with a submission deadline of June 1, 2015.

This workshop is designed for those interested in seeking CGEA seed money to launch an educational research project. The workshop objectives include:

- describe the requirements of the CGEA mini-grant program,
- discuss the characteristics of a competitive CGEA grant proposal, and
- start process to develop a fundable CGEA grant proposal.

Participants will receive grant writing resources/tips, including actual examples of proposals successfully selected for funding as part of the CGEA Mini-Grant Program. In addition, a panel of investigators funded by mini-grants will share their lessons learned and how they used their CGEA funding to launch successful research programs.

11:00 – 11:15 am	BREAK
11:15 am – 12:15 pm	AAMC Presentations
<i>Burkhart A</i>	AAMC Update – Optimizing GME Initiative <i>Kate McOwen, Director of Strategic Initiatives in Medical Education, AAMC</i>
<i>King</i>	FIRST <i>Julie Fresne, Director Student Financial Services</i>
<i>Pierce A</i>	MedEdPORTAL/MedAPS Update <i>Robby Reynolds, Senior Director, Medical Education Online Programs</i>
<i>Pierce B</i>	Careers in Medicine <i>George Richard, Director Careers in Medicine</i>
<i>Private Dining Room</i>	GSA Professional Development Initiative <i>Geoffrey Young, Senior Director for Student Affairs</i>
12:15 – 1:15 pm <i>Bellow A-C</i> LUNCH	WELCOME FROM THE DEAN Dr. Daniel M. Clinchot, MD, is the Vice Dean for Education for The Ohio State University College of Medicine and the Associate Vice President for Health

Sciences Education for the Office of Health Sciences.

Dr. Clinchot has served The OSU College of Medicine and Medical Center in several capacities since coming to the university as a resident in Physical Medicine. He is an Associate Professor in the Department of Physical Medicine and Rehabilitation where he was previously the residency training program director, and he was Medical Director of the College's Clinical Skills and Assessment and Education Center from 2003 to 2009.

Dr. Clinchot earned his bachelor's degree in biology at St. John's University and his medical degree from the State University of New York – Syracuse. He completed his internal medicine internship and residency in Physical Medicine and Rehabilitation at Ohio State, where he also served as chief resident.

He has published and lectured extensively on the subjects of traumatic brain and spinal cord injury and has participated on a number of grants in brain injury research from prominent institutions and foundations, including the NIH. He has been a reviewer for numerous peer-reviewed journals and currently serves as associate editor of the American Journal of Physical Medicine and Rehabilitation and a reviewer for Academic Medicine. He has also been an invited speaker on the subject of medical education innovation at professional conferences throughout the country for the past eight years.

Dr. Clinchot has played a central role in growing Ohio State's national reputation for curricular innovation, specifically in the development and advancement the College's new "Lead. Serve. Inspire" curriculum, which launched in September, 2012.

1:15 – 2:00 pm
Burkhart A

Washington Update
Geoffrey Young, Senior Director for Student Affairs

2:00 – 3:30 pm

CONCURRENT SESSIONS

Burkhart A

MESRE Oral Abstract Presentations Session: Assessment
(Presentations are allotted 15 minutes)

Moderator: Debra Klamen, MD, Southern Illinois University

1. Student performance during NBME exams using a hybrid integration model for clerkships

Hoyle, Chad, Ohio State University Medical Center

2. Progress Redefined: Measuring Performance on an Integrated Progress Clinical Skills Exam (PCSE) across Four Years of Medical School

DeMuth, Robin, Michigan St. Univ. College of Human Medicine

3. A Novel Approach to Assessing Professionalism in Preclinical Medical Students Using Paired Self- and Peer-Evaluations

Emke, Amanda, Washington University School of Medicine

4. Internal Consistency Reliability of Medical School Interview Scores

Zaidi, Nikki, University of Michigan

5. Predicting Underrepresented Student Medical College Admissions Test (MCAT) Scores with Math and Vocabulary Testing in a Post baccalaureate Premedical Education Program.

Metz, Anneke, Southern Illinois University School of Medicine

Burkhart B

Unintended Consequences of Best Intentions: The True Medical School Story?

London, Daniel, Cleveland Clinic Lerner College of Medicine of Case Western Reserve University, Zabinski, Jeffrey, Boonshoft School of Medicine at Wright State University, Anderson, Mary, Rush Medical College, Mahan, John, The Ohio State University

Objectives: 1. Understand the diverging changes in medical school and residency application processes that have occurred in the past 5 years, and become cognizant of how these changes are impacting the medical school experience. 2. Understand the challenges student affairs offices have made in the recent past regarding admissions and applicant review, and how they continue to struggle to find sustainable solutions that best serve students and the medical profession. 3. Understand the challenges program directors face in the current match environment, and how they continue to struggle to find sustainable solutions that best serve students and the medical profession. 4. Understand how medical students' medical school experiences can become hijacked by the tension they feel from competing interests they are forced to manage.

Rationale: The path to become a physician has become increasingly competitive from pre-matriculation through the Match. There continue to be record numbers of medical school applicants; in response, the AAMC and student affairs community have made changes in what characteristics and skills are emphasized in medical school admissions. Selection criteria have changed to reflect a vision that we should select students that better match the ideal qualities we want in physicians. Additionally, with increasing enrollment and new medical schools opening without a commensurate increase in residency slots, the residency selection environment has become, and will continue to be, increasingly competitive. This has led to record numbers of applicants flooding residency program directors who are forced to adjust their own selection process to deal with the increased volume. With these two changes in the path to becoming a physician, a conflict in selection values may have emerged. Medical students are realizing that the qualities they were chosen for in medical school admissions may not be as important in the residency selection process. Due to this tension, students existing in an admissions system that purports to be about 'more than numbers' are increasingly concerned that the downstream competition is reducing the residency application process to a game almost exclusively of 'numbers'. This creates a situation where students have taken aspects of their education into their own hands—shifting away from the goal of becoming well-rounded physicians, and toward obsession with standardized test score and grades.

Important, frank discussions need to be had amongst all stakeholders in the medical education process, outside of their individual silos, to begin to combat this rising tension. Included among these stakeholders are leaders within medical school admissions, medical school educators, residency program directors, and medical students. Together, by examining facts colored with anecdotes of how the process is shifting, we may take steps toward a 'shared vision' for the future of these issues.

Hopkins

Best practices for including student feedback during curricular change

Melanie Bobbs, MS3 Medical College of Wisconsin (Moderator)

Elizabeth Huffman, MS3 University of Wisconsin-Madison School of Medicine and Public Health

Trevor Watson, MS2 University of South Dakota Sanford School of Medicine

Jacqueline Dauch, MS1 Western Michigan University Homer Stryker MD School of Medicine

Janet Lindemann, MD, MBA Professor and Dean of Medical Student Education, University of South Dakota Sanford School of Medicine

Objectives: 1) Hear first-hand experiences from medical students that were involved in their school's inaugural class of a new curriculum or deeply engrossed in assisting with a curricular change 2) Understand the unintended consequences and stressors placed on medical students who are subject to curricular change 3) Hear from a Dean of Education on her experiences leading a significant preclinical curricular change and the lessons she learned

4) Gain insights into how faculty can better structure curricular changes to be student friendly and promote student success

Rationale: Curricular change is a constant topic at the forefront of medical education. Medical schools across the country are responding to the changing environment of health care, new LCME requirements, and disruptive innovations, and what these mean for medical school curricula. Transforming a curriculum is not a simple task and it involves faculty, administrators, and students to varying extents. However, clearly delineated best practices for including medical students into the curricular change process before, during, and after implementation are lacking. Furthermore, medical school is a significant transition in any student's life. Although students experience the stressors and pressures of medical school differently, there is no doubt that a change in curriculum adds to their concerns, both professionally and personally. There should be a focus on how students provide feedback during curricular change, both during its development and during the transition. This is an important topic in both medical education and student affairs, as it incorporates how curricular change affects student engagement, performance, and wellness in the most formative years of their careers.

King

Interactive Learning Tool to Introduce Students to New Communities

Madeline Duffy, MPH, Shobhina Chheda, MD, MPH, Christie Seibert, MD

Dipesh Navsaria, MD, MPH, MSLIS University of Wisconsin School of Medicine and Public Health

Objectives: Workshop participants will: 1) Gain a method for framing a new learning environment or experience, with an emphasis on how the social and built environment may influence health. 2) Use the modified validated direct observation tool to assess a social and built environment 3) Experience facilitation related to observations they made of an environment 4) Discuss potential ways to structure the activity within their educational venue.

Rationale: All medical students, at all schools, see patients who are members of families and communities. Also medical students personally enter new communities during various times during their education. By training future physicians to understand the context of patient's lives, they will be better prepared to meet patients 'where they are'. By noticing and accounting for the social and built determinants of health, students can build skills to provide

responsive, effective care. Also through structured observation and reflection students may be able to better understand the impact of their community on their own well-being. The UW SMPH created an introduction to the community to expose students to community settings in which their patients live, to enhance students' understanding of contextual and cultural factors that may influence patients' and their own health and behavior, and to promote community health and engagement. During our orientation to medical school students were given an overview of the community, demographics, health disparities and neighborhoods, as a first step to promote community health and engagement through community-based activities and reflection. Students (n=176) began the day with a plenary led by prominent community leaders who shared health statistics and community- identified assets and needs. Students were divided into six groups (n=~35) and each group visited a different community site. In smaller groups, of 6-8 students, they completed a pre-designated 30- minute walk of the neighborhood to assess the social and built environment using a validated community assessment tool. Students then reflected on their findings with community partners, faculty, and staff. The groups explored how neighborhood characteristics may relate to individual and community health and the role of physicians in advancing community health. An evaluation of the experience using a five point scale indicated between sixty to eighty percent of students noted one of the top two ratings for a) their understanding of a Madison neighborhood and the resources available for supporting the health and wellbeing of its residents, 64.6%; b) how partnering community agencies address the health needs of its community 82.2%; and c) an opportunity build relationships with faculty, staff, and students, 84.2%. Introducing learners to new environments and experiences through the use of a validated community assessment tool could be done at a variety of times and places across the medical education experience. Implementation of this activity could enhance learners understanding of factors and challenges, related to social and built environments, influencing individual and personal health. We aim to disseminate our methodology, modified tool and experience to those attendees working with medical students and residents so they may consider how this would best add value at their own institutions.

Pierce A

Training Residents to Address Ethical Issues: Application of the Assessing Clinical Ethics Skills (ACES) Evaluation Tool

Wasson, Katherine, Kuczewski, Mark, Loyola University Chicago

Objectives: To describe the need for practical training for residents in when and how to address ethical issues with patients and families. To describe the development of the Assessing Clinical Ethics Skills (ACES) evaluation tool. To demonstrate with participants how to use and implement the ACES evaluation tool to evaluate residents' skills in facilitating a family meeting and addressing ethical issues.

Rationale: One key challenge facing residents is learning when and how to address ethical issues in practice. The authors have developed an assessment tool for clinical ethics consultations which can be adapted to help residents learn how to broach these issues with patients and families. The Assessing Clinical Ethics Skills (ACES) tool was developed by four bioethicists who teach and conduct clinical ethics consultations at an academic medical center and a medical education specialist. The ACES tool is based on standards set by the American Society for Bioethics and Humanities (ASBH) for clinical ethics consultations and adapted from the Veterans Affairs Ethics Proficiency Tool. It is a 12 question (35 item) assessment tool which allows trained evaluators to

examine whether the resident can effectively facilitate a family meeting involving ethical issues. Ethics case simulations along with the ACES evaluation tool allows medical educators to provide structured training and evaluation for residents regarding their interpersonal and communication skills surrounding ethical issues with standardized patients and families. The ACES tool is used in simulated case consultations and provides a safe environment for residents to practice and refine these skills.

Pierce B

Workshop Academic Coaching: An Innovative Holistic Approach to Cultivate Student Academic Resilience

El-Amin, Wendi, Southern Illinois University Medical School

Objectives: During and after the workshop, participants will be able to:

1. Develop a conceptual understanding of what academic coaching is and what models and approaches are available

in medical education. 2. Learn from a case study of the implementation of academic coach at a medical school. 3. Identify the anatomy and the differential diagnosis of the struggling medical student. 4. Discuss the treatment strategies of six domains for academic coaching (Time guidance, Test taking strategies, Self-Regulation, Ambition analysis, Motivation and Drive Enhancement, Academic performance strategies and assessment) 5. Develop a structure to implement an academic coaching program at their medical school.

Rationale: Multiple individualized factors contribute to the challenges of medical students. The failure of medical students in curriculum represents a dynamic of multiple problems, including cognitive, psychological, social and emotional challenges. In an effort to strengthen retention efforts, it is critical that medical schools develop innovative and holistic systems to protect the personal and societal investment of medical students. However, existing remediation approaches in medical education is an one-dimensional approach focusing on a cognitive learning aspect. Academic coaching provides students with a holistic intimate intervention that builds a framework for life long skills needed to thrive as a future resilient physician. An academic coaching model uniquely traverses the domains of medical education and student affairs. In this hands-on workshop, I will facilitate the audience to learn about academic coaching models and pragmatic tools that can be utilized for academic coaching practices at their own institution.

Private Dining Room

AAMC Focus Group – Faculty Development Resources

Robby Reynolds, Sr. Director, Med Ed Online Resources, AAMC

3:30 – 4:00 pm

BREAK

4:00 – 5:00 pm

Bellows A-C

PLENARY:

Collaborating across the Continuum: Wellness and Balance

Moderator: Steven Ricanati, MD, Assistant Dean for Student Affairs

Dean, Joseph Wearn Society,

Associate Professor of Medicine, Case Western Reserve University School of Medicine

*Iahn Gonsenhauser, MD, Resident in Internal Medicine at OSU.
Joshua Hauser, MD, Assistant Professor Medicine (Palliative Care) at Northwestern's Feinberg School of Medicine. Chairman, Professional Development Curriculum Element, one of four committees responsible for the new medical school curriculum at Feinberg.*

Sandra LaBlance, PhD, Assistant Dean for Student Affairs and Career Development, Oakland University William Beaumont School of Medicine. Co-Director of the PRISM program, a 4 year course that addresses wellness and personal development.

Joseph B. Meleca, M3 at the College of Human Medicine at Michigan State University.

5:00 - 5:30 pm

BREAK

5:30 – 6:30 pm

Bellows A-C

STUDENT SHOWCASE:

1. Special Committee on RMC Environment (SCORE)

Staci Aubry, Erica Huelsmann, Jay Behel, MadhuSoni, Patrick McIntire, Samuel McGownan, Rush Medical College

2. Comparison of a Faculty-Taught and Student-Taught Ultrasound Course: Are Students Effective Teachers?

Erich A. Stauder, Michael Peyton, Joelle Gabet, Caroline Pace, Medical College of Wisconsin

3. Rising M4's as Residents in Three Simulated Rounding Environments: Teaching Presentation Skills to Novice M3's.

Nicole Liberio, Lars Rikardsen, Meenakshy Aiyer, Gerald Wickham, University of Illinois College of Medicine at Peoria

4. Effect of Doximity Residency Rankings on Residency Applicants' Program Choices

Debbie F. Cheng, Aimee M. Rolston, Sarah E. Hartley, University of Michigan Medical School; Sorabh Khandelwal, The Ohio State University; Jennifer G. Christner, Upstate Medical University; Rachel M. Caty, University of Michigan School of Public Health; Sally A. Santen, University of Michigan Medical School

5. Rounds in the Modern Era: A Qualitative Study of Internal Medicine and Pediatrics Resident Perceptions

Raphael Rabinowitz, Jeanne M. Farnan, The University of Chicago Pritzker School of Medicine; Oliver F. Hulland, Lisa Kearns, The Ohio State University; Michele Long, Bradley Monash, University of San Francisco; Priti Bhansali, Children's National Health System; Helen B. Fromme, The University of Chicago

5:30 – 7:30 pm

Bellows D-F

POSTER SESSION AND RECEPTION

Posters must be removed at the close of the Poster Session and Reception

Saturday, April 11, 2015

7:00 am – 3:00 pm **REGISTRATION**

*Bellows Prefunction
North*

7:00 – 8:00 am **BREAKFAST**

7:00 – 8:00 am **SECTION MEETINGS**
Bellows EF **Continuing Medical Education (CME)**

Burkhart B **Graduate Medical Education (GME)**

Burkhart A **Undergraduate Medical Education (UME)**

Bellows D **COSR Central Organization of Student Representatives (COSR)**

8:15 – 9:15 am **BUSINESS MEETINGS**
Burkhart A **Central Group on Student Affairs (CGSA)**

Burkhart B **Central Group on Educational Affairs (CGEA)**

Bellows D **Central Organization of Student Representatives (COSR)**

9:15 – 9:30 am **BREAK**

9:30 – 10:15 am **CONCURRENT SESSIONS: Small Group Discussions**

Bellows E-F **Facing Ferguson: Implications and Opportunities for Medical Education**
*Stuart Slavin, MD, MEd, Michael Railey, MD, Ambrose Campbell, M2
Alex Bodkin, M2, Saint Louis University School of Medicine*

Objectives: By the end of the session, participants will be able to:

1. Define implicit bias and the ways it can have an impact on health care
2. Describe initiatives relating to bias and health disparities that have been implemented at SLU SOM

3. Describe other interventions that are needed to better address the problems of implicit bias and health disparities.

Rationale: The events in Ferguson, Missouri and the protests that erupted nationally shone a light on the need for deeper dialogue relating to ongoing injustice and racial disparities in the US. Medical schools should not be exempt from these discussions as health care disparities and the social determinants that contribute to them remain substantial. In addition, the evidence that physician implicit or unconscious bias contributes to these disparities is overwhelming. Saint Louis University School of Medicine (SLU SOM) has had a curricular thread for a number of years that has addressed these issues but these efforts seemed inadequate in the wake of events in Ferguson. This small group discussion will focus on curricular initiatives at SLU SOM before and after Ferguson and what more needs to be done.

Burkhart B

Four-Year Follow-up on the Education-Centered Medical Home (ECMH): Merging "Value-Added Medical Education" with the Educational Principles of the Patient-Centered Medical Home

Daniel Evans, Jennifer A. Bierman, MD, Daniel A. Colon, Daniel B. Evans, MD, Elizabeth R. Ryan, Ed.D., Lily V. Saadat Northwestern University

Objectives: 1) Describe the course structure, logistics, assessment strategy and funding model for the Northwestern University Education-Centered Medical Home (ECMH) – a novel longitudinal clerkship model that merges the principles of "value-added medical education" with the Educational Principles of the Patient-Centered Medical Home (PCMH). 2) Network with and hear direct feedback from students and faculty who are in their third or fourth year as active ECMH participants at a variety of primary care clinics in Chicago 3) Describe the program evaluation results after four-years of experience across 18 sites 4) Explain perspectives from a cross-section of stakeholders (students, faculty preceptors, clerkship directors, and departmental leadership) in how the ECMH program has evolved over the past four years including successes, failures, and future directions

Note: Northwestern will share course materials with any institution(s) who is(are) contemplating the launch of a similar program.

Rationale: Medical education leaders have argued that continuity should be a fundamental organizing principle for reform.¹ Many schools have heard this call and developed longitudinal integrated clerkships (LICs). However, the LIC model has focused predominantly on third year students; and the model has spread to a minority of students due to its complex logistics, and financial constraints. Alternate clerkship models are needed in order to provide the educational benefits of continuity to a larger number of medical students. In 2009, primary care physician societies made a call for all US medical schools to incorporate the educational principles of the Patient-Centered Medical Home into their curricula.² As part of a curriculum renewal process in 2011, Northwestern University launched a pilot called the Education Centered Medical Home (ECMH). The ECMH is an innovative, ambulatory clerkship model that combines the continuity aspects of a Longitudinal Integrated Clerkship (LIC) with the educational principles of the Patient-

Centered Medical Home (PCMH). At each ECMH clinic, teams of sixteen students (4 from each medical school class) are embedded within primary care clinics and paired with a faculty preceptor to care for a panel of medically complex patients over time. Students see ambulatory patients with preceptor oversight, they work as teams and serve as peer educators, they contact patients for care coordination between clinic sessions, they act as "quality managers" to track recommended screening or chronic disease guidelines, and they compile quality report cards to analyze their performance over time.³ Since its inception, the ECMH program has grown from a pilot of 52 students across 4 clinics, up to 300 current students across 18 clinics.

Initial student and faculty reactions have been positive, and preliminary chart review data suggest that students are able to add value to a medical clinic. We are at a crossroads. Education leaders and healthcare policy experts agree that we must push for a system of enhanced continuity and accountability; and academic medical centers are trying to "transform from centers of learning into learning health systems."⁵ This seems the perfect time to re-visit the structure of our clerkships, insist that all students have an early meaningful role in the healthcare delivery system, ensure team-based care and quality improvement competence of all graduates, and see that all students understand the principles of the evolving PCMH mode. Incorporating medical students longitudinally into our clinics as health coaches would allow our students to learn care coordination skills; but more importantly could impact actual patient outcomes – fitting with the goals of "value-added medical education" as called for by medical education leaders

King

Incorporating student study skills and wellness as a curriculum element

Yocum, Amanda, Weiss, Lisa, Holliday, Janet, Northeast Ohio Medical University

Objectives: Participants will be able to:

- 1) Describe how NEOMED has used the Learning and Study Skills Inventory as well as practice, standardized comprehensive exams to identify students at risk of failing STEP 1.
- 2) Describe how NEOMED uses student services to address the issues of and support identified "at risk" students.
- 3) Describe the impact of a defined curricular element (self-testing and planning) on STEP 1 performance in a defined medical student population including "at risk" students.
- 4) Describe the research on effective study skills and primary methods of non-pharmacological cognitive enhancement as well as the findings in the NEOMED student population that lead us to believe that the next opportunity for STEP 1 improvement lies with stress reduction.
- 5) Develop recommendations for implementation of an ideal student wellness program based on their experiences and discussion for their home institution.

Rationale: The NEOMED Office of the Dean and Academic Support Office instituted a new course to the second-year medical school curriculum in the spring of 2012 entitled Comprehensive Review Course (CRC). It was designed to increase STEP 1 performance by focusing on two specific targets: 1) improving student study skills and 2) identification and intervention for struggling students. We found that increased self-testing with feedback and attention to test-taking strategies and time

management as elements of the curriculum improved STEP 1 scores on average in agreement with our expectations based on published studies. While the national increase in STEP 1 improved 2 pts/year, CRC students improved 6 pts/year on average. This increased performance occurred in spite of a reduction in the original number of hours required and over a period of time when incoming student MCAT scores remained virtually the same and the percentage of students who withdrew or delayed graduation decreased. However, we found that students who continued to struggle with the standardized comprehensive test performance in spite of the focus on increased study skills tended to have more problems with anxiety as measured by the Learning and Study Skills Inventory (LASSI) administered to all of our incoming students in their first year. This small group discussion will focus on participants' experiences and efforts around implementing student wellness as a formal or supplemental part of their curriculum, with particular emphasis on anxiety reduction and impact on STEP 1 performance.

Pierce A

Making the Team: The Impact of the Learning Environment on Professional Identity Formation

Grieco, C. Alexander, Ohio State University, Pfeil, Sheryl, Ohio State University, Straus, Christopher University of Chicago, Davis, John, Ohio State University

Objectives: As a result of participation in this small group session, attendees will be able to:

1. Describe the concept of hierarchy on the care team, and its relationship to the learning environment.
2. Discuss the connections between the learning environment and medical student PI formation.
3. Discuss the potential impact of medical student PI formation on that of the physician-teacher.

Rationale: Challenges encountered by medical students within the learning environment remain at the forefront of efforts for mitigation across institutions. Hierarchical structure of the care team has been proposed as a contributing factor to negative learning experiences. While a gradient of expertise is expected, this is unlikely to be the lone source of the tension that student learners experience. The interplay between roles on the team may best be considered by shifting the focus from knowledge and experience to the concept of the roles themselves. Professional identity (PI), a physician's view of himself or herself as a physician, is impacted by a variety of developmental and social factors. PI formation has been cited as a key goal for reform in medical education in the 2010 Carnegie Foundation review by Cooke and Irby. Investigations of PI have focused primarily on its formation in medical students. In contrast, there has been little consideration or study of PI in resident or practicing physicians. The connection between medical student PI formation and the learning environment has been explored as a developmental construct and as a means of positive intervention. The interrelationship is typically presented as an interface between the student learner and extrinsic factors of the environment. Residents and attending physicians heavily influence this environment, and are likewise subject to its effects on their own PI. Through interactions with medical

students, the physician-teacher's roles of "caregiver" and "patient advocate" expand to include those of "teacher, mentor, and role-model." The duality and impact of learners on the PI of physician-teachers is implicit and potentially transformative. Broadening our understanding of medical student PI formation, and our ability to affect it positively, involves recognizing physician-teacher PI as evolving within, rather than as a static element of, the learning environment. Operationalizing this for the benefit of patient care re-engages the team hierarchy, not in terms of differential expertise, but of differential needs for developing and maintaining a strong PI.

Pierce B

Teaching and Assessing Essential Clinical Skills: Are We Progressing or Regressing?

*Hasbrouck, Carol, Mary R, Smith, MD University of Toledo COM
Kimberly Tartaglia, MD, PhD, Mary McIlroy, MD, Ohio State*

Objectives: Participants will be able to:

Describe current approaches to clinical skills education and assessment.

Discuss the potential barriers to teaching, maintaining and assessing clinical skills. Describe environmental issues that impact students' acquisition and maintenance of basic clinical skills. Analyze the impact of role modeling and the "hidden curriculum" on clinical skills acquisition and retention. Discuss/debate the perceived decline in students' history-taking and physical examination skills during the clinical clerkships?

Rationale: There are continuing concerns about the preparation and assessment of medical students' clinical skills and their application in patient care. The AAMC states, "an essential purpose of medical education is to ensure that each student develops and continues to refine the basic clinical skills that are required to provide competent care throughout a lifetime of professional work". The AMA and others are also calling for curriculum reform. With the initiation of Entrustable Professional Activities, Milestones, and the focus on competency-based curriculum and assessments, these concerns are more pronounced. Many issues and questions surround the preparation and assessment of students for their future careers. As medical education and the clinical learning environment change, some fear there may be a risk or even evidence of decay in history and physical examination skills in the technologically advanced, fragmented, fast-paced, clinical environment. What is the best environment for learning and advancing clinical skills? Are we effectively assessing clinical competencies? These issues are critically important in preparing students for their future practice. Preparing students for the future is a continuous process that requires repetition and on-going refinement.

Content Overview: Three representatives from two institutions will briefly describe and analyze how their institutions are preparing students for their clinical roles and the types of assessment mechanisms in place to assure students acquire, retain, and advance their skills. The University of Toledo is considering curricular reform, but currently has one standardized track. Dr. Smith, the faculty member representing this institution, has been on the Dean's staff and conducts observed clinical encounters in the pre-clinical and clinical years. She has concerns about the students' retention of clinical skills, their difficulty performing focused H&P's, and their reliance on checklists during exams vs thinking critically

about the H&P. Attitudes about the critical importance of well-conducted H&P's are exemplified by a student's comment, "It doesn't matter what I hear, they will order an ultrasound anyway." Finally, there is concern that students are observing poor role modeling which may suggest the need for ongoing faculty and resident development. The Ohio State University is in the midst of a curriculum revision and is concurrently running two curricula. The two OSU representatives, Drs. McIlroy and Davis, will highlight the different approaches to clinical skills development and assessment. The new curriculum contains enhanced and frequent evaluation of clinical skills, along with remediation when needed. The old curriculum, however, had traditionally been successful in developing students' clinical skills, so the pros and cons of the new and old approaches will be discussed.

Hopkins

AAMC UPDATE: ERAS

Amy Mathis, Director, ERAS Medical School, Applicant and Business Partner Relations

9:30 am – 11 am

Burkhart A

MESRE Oral Abstract Presentations Session: Students

(Presentations are allotted 15 minutes)

Moderator: Gary Beck, PhD, University of Nebraska

1. Matchmakers or Money-suckers: Utilization and Effectiveness of Visiting Student Electives Across Specialties

Anderson, Mary, Rush Medical College

2. Does Longitudinal Physician Faculty Exposure Influence Career Choice in Medical Students?

Giano, Leigh Ann, The Ohio State University College of Medicine

3. Perspective taking in first year medical students: How does it relate to pro-social traits and values?

Ahmad, Nadia, Medical College of Wisconsin

4. Medical Students' Willingness to Say "I Don't Know"

Bree, Kevin, Wright State University Boonshoft School of Medicine

5. Demoralizing Factors for Medical students in the Core Clerkship Year

Slavin, Stuart, Saint Louis University School of Medicine

10:15 – 11:00 am

CONCURRENT SESSIONS: Small Group Discussions

Bellows EF

The MSPE (Medical Student Performance Evaluation): Whither goest thou?

Lynn, Joanne, Davis, John, Winger, David, The Ohio State University College of Medicine

Objectives: 1) Summarize the current guidelines for MSPE letters 2) Describe the variation in the content and format of MSPEs produced by various medical schools. 3) Describe solutions to the challenge of global grades for integrated longitudinal blocks vs disciplinary specific content desired by specialty program directors. 4) Discuss best practices to

communicate competency achievement in competency based curricula.
5) Describe best practices in the reporting of professionalism evaluation.

Rationale: The MSPE is a summative evaluation report of each individual medical student's academic history and performance up through the summer of the senior year at the time of submission to match programs. It is typically produced by either the student affairs or medical education offices of each medical school and requires a significant investment of administrative time and resources. The 2002 AAMC publication "A Guide to the Preparation of the Medical Student Performance Evaluation" offers guidelines for length, format and content but has not been updated in over a decade. The content of the MSPE varies significantly between medical schools. The influence of the MSPE on residency program directors' selections of applicants for interview has been challenged by timing issues. Some program directors claim that they do not consider the MSPE a significant factor in their selections; others rely heavily on it for clues regarding applicant academic performance and other unique characteristics and strengths and weaknesses. Changes in medical school curricula including the increasing prominence of integrated longitudinal courses and competency-based education present new challenges for MSPE writers regarding the communication of student performance.

Burkhart B

Exploring How Medical Students Can Add Value during Clinical Experiences

Simpson, Deborah Aurora Health Care, Marcdante, Karen, Medical College of Wisconsin Rivera, Kristin Aurora Health Care, Petersen, Tara, Medical College of Wisconsin

Objectives: At the conclusion of this session participants will be able to:

1. Present two "1-minute elevator speeches" each highlighting how students (early clinical learners; M3 clerkship students) to add value in the clinical workplace while achieving school specific rotation objectives and the AAMC's Core Entrustable Professional Activities for Entering Residents.
2. Identify key features of alignment strategies needed to create positive outcomes for both students and preceptors (e.g., clinical and education win-win situations).

Rationale: Teaching medical students in the clinical setting takes physician's, other providers' and patient's time. The simultaneous evolution of expectations and standards for clinical productivity and value based clinical care along with the ACGME's Clinical Learning Environment Review's emphasis on quality, safety, care transitions, professionalism are occurring at the same time as increasing requests for clinical placements. Increases in placement requests are driven by the incorporation of longitudinal clinical placement for early learners (M1 and M2 students), increasing MD & DO medical student enrollments, and precepting request from other health professions students.

Our ability to recruit and retain clinical preceptors to teach medical students must seek ways for students to positively impact the Triple Aim for Health Care: (1) Better care for individuals; (2) Better health for populations; and (3) Reducing per-capita costs. As Darrell Kirch emphasized during his AAMC 2014 Medical Education plenary address, despite the fact that the U.S. spends almost double the amount of many other countries, our "health outcomes lag globally": we are in the bottom

quarter for life expectancy, fourth highest for infant mortality, and highest for adult obesity. How can medical education address some of these challenges? Per Kirch and Rappley, our ability to align our medical student education and health care systems as true partners to improve patient care will “determine our sustainability”. This session will describe two efforts to support “value added” roles for medical students in clinical settings to trigger audience discussion around current/future efforts.

King

Encouraging Curiosity to Prepare Students for Careers in Medical Education

Adkins, Frances, Ohio University Heritage College of Osteopathic Medicine

Objectives: I. Discuss the institutional and student benefits of the Primary Care Associateship program II. Develop strategies for encouraging curiosity and investigation of medical education research III. Discuss the unique needs of medical students and junior faculty who are exploring medical education concepts

Rationale: Healthcare and medical education are changing at an unprecedented pace. The Affordable Care Act, Patient Centered Medical Homes, and the movement toward competency-based education are a few of the major changes. In order to prepare future medical educators, the Ohio University Heritage College of Osteopathic Medicine (OU-HCOM) in Athens, Ohio, has developed Primary Care Associateship Programs in Family Medicine (FM) and Osteopathic Manipulative Medicine (OMM). After completing their third year clerkships, Primary Care Associates spend a year teaching preclinical students, participating in faculty development activities, and completing a scholarly project. During the summer of 2014, OU-HCOM opened an extension campus in Dublin, Ohio. Rather than keeping separate Associateship programs in FM and OMM as they are at the Athens campus, the FM and OMM Associateship programs were combined for the Dublin campus. During the fall of 2014, the Primary Care Associates initiated an informal medical education journal club. They identified faculty mentors and established regular meeting times to discuss journal articles. The articles were related to current events in medical education, including the move to competency-based education, active learning, team-based learning, and methods of assessment. The journal club was video conferenced so that the Primary Care Associates and mentors from both campuses could voluntarily participate. During this proposed small group discussion, speakers will share their diverse perspectives on implementing and participating in the informal medical education journal club as part of the formal Associateship program. Participants will not only interact with the speakers but will be able to share their perspectives on the value of encouraging curiosity and collaborative inquiry.

Pierce A

Professionalism Conceptual Framework Applied in M3 Clinical Clerkship Case Writing and Analysis

Wickham, Gerald, University of Illinois College of Medicine at Peoria

Objectives: We aim to present the Six Competency Professionalism Framework in the Small Group Discussion as well as share with the attendees a writing assignment about professionalism that we currently include in the emergency medicine 2-week immersion. We also aim to facilitate discussion around the case topics that have been identified in the completed writing assignments as these pertain to the conceptual framework. At the end of the session the participants will have the materials necessary to begin a case-writing assignment in a clinical clerkship at their home institution.

Rationale: With the development in 2013 of the UICOMP Professionalism Taskforce and our commitment to a focus area highlighted by Cooke, Irby and O' Brien in 2010 ("the professional identity formation of physicians -- meaning the development of their values, actions and aspirations -- should be a major focus of medical education") we developed a conceptual framework for professionalism applicable at all levels of education. This framework identifies professionalism behaviors in each of the six ACGME competency domains and is used to educate students, residents and faculty about the relevance of professionalism in their role.

Pierce B

RESOURCE EXCHANGE:

1. Children with Disabilities and Medical Student Engagement Program

Rashid , Hira, Wayne State University School of Medicine

2. Implementation of a Staff-Driven Exam Quality Improvement Process

Zaidi, Nikki, University of Michigan Medical School

3. Interview Preparation for the Residency Match: A Resource Exchange to Aid Program Development

Tissot, Abigail, University of Cincinnati College of Medicine

Hopkins

AAMC UPDATE: NRMP

Jeannette Calli, Director, Match Operations

11:00 am

Lower level exit to Wall street

Shuttle buses departing Hilton for Recruitment Fair and AAMC Updates focus on Admissions at The Ohio State University College of Medicine

Pick up box lunches before boarding buses

11:15 am- 3:15 PM

Lobby and auditoriums Meiling Hall, 370 W. 9th Avenue The Ohio State University College of Medicine

AAMC UPDATES: Focus on Medical School Admissions

11:30 am- 12:30 pm MCAT Update *Karen Mitchell Senior Director, Admission Testing Service and Dana Dunleavy, Manager Admissions Research*

12:30 pm – 1:15 pm AMCAS Update *Mandy McManamon, AMCAS Communications & Engagement Manager*

1:15 pm – 2:00 pm Admissions Town Hall *Christina Grabowski, the*

Assistant Dean for Medical School Admissions and Financial Services at the Oakland University William Beaumont School of Medicine

11:15 am – 12:15 pm

Bellows A-C

Plenary:

EPAs: What, Why, When, and How?

Patricia S. O'Sullivan Ed.D.

Director, Office of Research and Development in Medical Education at the University of California, San Francisco School of Medicine.

Professor Department of Medicine, University of California, San Francisco School of Medicine.

12:15 – 1:15 pm

Bellows A-C

BOX LUNCH AND SPECIAL INTEREST GROUP (SIG) AND COSR MEETINGS

Academic Development Convener: Gina Paul

Clerkship Administrators Convener: Donnita Pelsler

Current Issues in Student Affairs Law and Policy Convener: Linda Rowe

Directors of Clinical Skills Courses (DOCS) Convener: Jeanne Farnan

Scholarly Activity Convener: Candace Zeigler and David Zeigler

Service Learning Convener: Jean Szura

Pierce A

COSR meeting

Pierce B

Core Entrustable Professional Activities for Entering Residency (CEPAER)

Maryellen Gusic, MD, Chief Medical Education Officer, AAMC

12:30 pm

Lower level exit to Wall street

Shuttle buses departing Hilton for Recruitment Fair and AAMC Updates focus on Admissions at The Ohio State University College of Medicine

1:15 pm – 2:15 pm

Burkhart A

CGEA Laureate History

2:00 pm

Lower level exit to Wall street

Shuttle buses departing Hilton for Recruitment Fair and AAMC Updates focus on Admissions at The Ohio State University College of Medicine

2:00 pm- 3:30 pm

Presentations to premedical students

Lobby and
auditoriums
Meiling Hall,
370 W. 9th Avenue
The Ohio State
University College of
Medicine

- Interview tips *Presenter: Abbigail Tissot*
- Personal statement tips *Presenter: Brian Ulrich*
- Picking your 15 schools *Presenter: Joel Maurer*
- Q and A with Admissions Deans *Panel: Steve Gay, Lina Mehta, Alison Martin, Christina Grabowski*

2:15 – 2:30 pm

BREAK

2:30 – 4:00 pm

CONCURRENT SESSIONS

Burkhart A

How Many Chances Do We Give? Remediating Medical Students
*Roman, Brenda, Boonshoft School of Medicine Wright State University
Beck, Gary, University of Nebraska Medical Center, Gay, Tamara
University of Michigan Medical Center, Johnson, Laura, Boonshoft
School of Medicine Wright State University*

Objectives: At the end of this panel discussion, participants will be able 1) to discuss what evidence has been reported about remediation; 2) to describe programs have been implemented at schools; and 3) to discuss broader ethical issues of remediation versus termination.

Rationale: While the number of medical students has increased, there has been no concomitant increase in residency training positions. There are already a number of specialty residency training programs that are considered highly competitive. However, those disciplines that were not previously considered competitive are becoming more difficult to match into a residency position. As evidenced by the 2014 Match, approximately 1,000 US allopathic seniors did not initially receive a training position. It is becoming increasingly more important that students achieve passing marks in all of their classes. In a 2012 report in *Academic Medicine* (87(8):1070-1076.), grading across medical schools was found to be highly inconsistent. Because of this, receiving a passing score on first attempt of the United States Medical Licensing Exam Step I has been an initial screen for applicants as an objective measure of medical knowledge. Therefore opportunities for residency interviews may be limited for students who do poorly on Step I or fail courses. Therefore, early interventions to assist students in their academic pursuits need to be implemented. Medical knowledge is only one aspect of professional competence. In addition to remediation for academic performance, professional behaviors are now being reported as part of residency training. As early as the first year of training, professional behaviors may be identified that may later result in practice problems. This necessitates more structured mentoring that is both formative and summative with medical students and residents.

Burkhart B

Delivering a Research Curriculum to 21st Century Resident Learners while Addressing ACGME Accreditation Requirements
Klamo, Rachel, Hinsdale Family Medicine Center (HFMC), Wright, Katherine Northwestern University, Eisele, Karen Hinsdale Family

Medicine Center (HFMC), Cinel, Lauren Hinsdale Family Medicine Center (HFMC), Ryan, Elizabeth, Northwestern University

Objectives: 1. Describe how to integrate instructional technology to deliver educational content across multiple institutions to engage collaborative research teams. 2. Identify curricular and pedagogical barriers that faculty face when implementing a distance-based research courses, as well as solutions to these challenges. 3. Identify curricular and logistical barriers resident physicians face when participating in a distance-based research course, as well as suggestions for success.

Rationale: In order to fulfill ACGME requirements for scholarly concentration projects, all family medicine residencies must engage in research. However, many residencies lack the resources to make rigorous contributions to the scientific literature, citing faculty time and resources as their most significant barriers.¹ To address these challenges, a distance-learning platform was created to guide residents through the research process and facilitate community engaged scholarship. This panel presentation provides an overarching framework for engaging multi-institutional collaboration in training resident physicians to conduct research. The Research Education and Service Learning Institute (RESLI) delivers online professional development modules built on adult learning principles that allow the participant to learn at their own pace and time. Balancing multiple responsibilities, residents can access learning modules from laptops, tablets, or smartphones as their schedule allows. The Ruth Davee Resident Research Scholars Program provides the necessary support and infrastructure to encourage resident physicians to productively engage in research activities that benefit their practice/community. As we embark on the fifth class of scholars to participate in the program, we have both accomplishments and lessons learned to share.

King

Dealing with Workplace Bullies: You can make a difference!

Rainer Gedeit, Tara Petersen, Karen Marcdante, Medical College of Wisconsin

Objectives: At the end of this workshop, the participants will be able to:

1. Identify types of bullying commonly experienced in academic medicine and the health care environment. 2. Describe strategies that individuals and institutions can use to address workplace bullying. 3. Select at least one strategy to practice in addressing workplace bullying experiences

Rationale: We have all been exposed to unreasonable or aggressive behavior in our workplace (even in the health care setting), which means we have all had to deal with bullies. Regardless of the type of bullying, interactions with the perpetrators leave you feeling humiliated, disrespected or in some way worse about yourself. Data reveal that unchecked bullying results in avoidance behavior, decreased productivity and lower levels of employee engagement and can cost businesses significant money, whether in dealing with the perpetrator or victims. In health care, it may result in similar activities, adversely affecting patient outcomes. In addition, bullying appears infectious and often fosters retaliation (another form of bullying) which continues the cycle. We are not, however, powerless. This workshop will address bullying in the academic and health care settings to identify methods that can be used

to address the problems and begin to create an environment that does not tolerate bullies and bullying behaviors.

Pierce A

I-SPIRAL©: Using an Electronic Narrative Builder to Provide Rich Formative Feedback to Medical Students

Susan Splichal, Linda Olson, Devendra Pant, University of North Dakota School of Medicine & Health Sciences

Objectives: The purpose of the workshop is to provide an opportunity to the participants to have 'hands-on-experience' on the use of I-SPIRAL, a formative feedback tool, within the context of small group patient-centered learning. At the end of the session, the participants will be able to: 1) critically select Tasks/Prompts that describe individual student behaviors that reflect collaboration in the group; 2) make the implicit patterns of group interactions explicit for use in formative student feedback narrative; and 3) reflect on the usefulness of I-SPIRAL as an electronic narrative builder to provide formative feedback within a medical education curriculum.

Rationale: The Integrated Sequenced Performance Inventory and Reflective Assessment of Learning (I-SPIRAL©) addresses the hallmark of 'patient-centered learning' (PCL) in the pre-clinical years of the University of North Dakota medical education curriculum. It assesses students' abilities to analyze, synthesize and meaningfully apply facts, skills, and concepts through inter-disciplinary perspectives to solve patient problems in a collaborative team environment.

I-SPIRAL is essentially a qualitative formative feedback tool developed by input from a diverse group of facilitators: clinicians, basic scientists and educators. It constitutes hierarchical, criterion-based progressive descriptors to capture subtleties in overarching evaluation domains to assess students' integrative abilities. The growing shift toward 'patient centeredness,' 'team-based learning' and 'health systems thinking' inspired us to venture into the development of the I-SPIRAL. I-SPIRAL envisions that PCL plays a crucial role in the development of professional competencies and identity formation of a student along the continuum of medical education. I-SPIRAL has been designed in line with typical electronic medical record (EMR) narrative builders. The intention is that facilitators will select 'Tasks/Prompts' from the list provided to build customized narratives in the categories listed in the I-SPIRAL template; i.e., Acquisition & Integration of Knowledge, Peer Teaching & Communication, Professionalism, Group Dynamics & Team Skills, Patient-Centeredness. For the purpose of this workshop, we will focus on Group Dynamics and Team Skills. Collaborative team activities play a central stage in the professional life of future physicians from morning bed-side rounds to preparing patient discharge summaries to organization of ambulatory care services to patients. 'Health team' concept and 'distributed learning' have been increasingly emphasized in medical education. The challenge has been how to assess 'group performance behaviors' of students and provide them with timely and effective feedback in the classrooms. We expect that the Tasks/Prompts listed under the 'Group Dynamics and Team Skills' domain within the I-SPIRAL will help facilitators to observe, monitor and provide feedback on team building to medical students.

Pierce B

A New Twist on Student Orientation: Students Handing-off a Culture of Professionalism to their Junior Peers

Steven Ricanati, Sarah Wang, Lynda Montgomery, Mathew Taylor, Amy Wilson-Delfosse, PhD Case Western Reserve University School of Medicine

Objectives: Compare and contrast faculty-centered and student-centered medical school orientation Identify the attributes of student-centered education that are emphasized by the Peer Handoff program Identify opportunities for collaboration between curricular affairs and student affairs Articulate how teaching students to function in PBL is a crucial step in the acculturation towards their profession Identify opportunities to use PBL and TBL as part of oath of professionalism construction Articulate the role of oath writing in early professional development (Empowerment, self-regulation)

Rationale: In an era where medical education is student-centered and affords opportunities to develop skills of lifelong learning, a faculty-guided, passive orientation to medical school seems out of place. At Case Western Reserve University School of Medicine, rising second year students “hand-off” the Western Reserve curriculum to their incoming peers in a “Peer Handoff Program.” Peer Handoff student leaders are mentored by faculty in student affairs and curriculum to develop this two-day introduction to the curriculum and life and learning at CWRU. Students introduce incoming students to the method and expectations of the CWRU problem based learning program and guide incoming students in a discussion about their professional identity as junior doctors. By the end of the Peer Handoff orientation activities, incoming students understand and embrace the student-centered, self-directed learning environment at CWRU, value and respect the learning collaboration that exists between students and faculty, and identify for themselves the professional behaviors and expectations that will begin to form their identities as future physicians. Orientation culminates with a four hour workshop, facilitated by the Peer Handoff students, during which students craft their own Oath of Medical Professionalism which the entering class recites at White Coat Ceremony.

Bellows EF

MESRE Oral Abstract Presentations Session: Students

(Presentations are allotted 15 minutes)

Moderator: Larry Gruppen, PhD, University of Michigan

1. Elephant in the Room? General Medicine Faculty Perceptions of the Impact of Electronic Medical Record (EMR) on Patient-Doctor Communication

Lee, Wei Wei, University of Chicago

2. Predictors of full-time faculty appointment among MD-PhD program graduates: A national cohort study

Andriole, Dorothy Washington University School of Medicine

3. A Faculty Development Program for Pre-Clinical Small Group Facilitators

Thompson, Laura, The Ohio State University College of Medicine

4. Medical School Faculty Attitudes towards E-Learning

Lee, Beth, The Ohio State University College of Medicine

5. Relationship-Centered Communication Skills and the Electronic Health Record: A Faculty Needs Assessment on the Need for Medical Student Education

London, Daniel, Cleveland Clinic Lerner College of Medicine of Case Western Reserve University

Hopkins

AAMC UPDATES:

2:30-3:15 pm

VSAS Update and Visiting Student Discussion

Ebony Moody, Residency Program Specialist

3:15-4:00 pm

GHLO

DeAnna Pearson, GHLO Program Manager

3:30 – 5:30 pm

Lobby and auditoriums

Meiling Hall,

370 W. 9th Avenue

The Ohio State

University College of

Medicine

RECRUITMENT FAIR

5:00 pm

Shuttle buses departing The Ohio State University College of Medicine for the Hilton

6:00 pm

Shuttle buses departing The Ohio State University College of Medicine for the Hilton

DINNER ON YOUR OWN

Sunday, April 12, 2015

8:00 – 9:00 am

Breakfast

Bellow A-C

Hopkins

COSR Business meeting

9:15 – 10:45 am

CONCURRENT SESSIONS

Pierce A

Mobile Apps 2.0: Leveraging iPads for medical education across the continuum

Hurtubise, Larry, Ohio University, Elissa Hall Mayo Clinic College of Medicine, Geraud Plantegenest College of Human Medicine, Michigan State University, Elizabeth Ryan Northwestern University Feinberg School of Medicine

Bring your iPad!

Objectives: At the end of this workshop, learners will be able to:

1. Navigate quickly between apps in a didactic or clinical setting
2. Leverage apps for effective education and communication
3. Develop materials and teaching strategies integrating apps

Rationale: Mobile apps are an educational technology suited for overcoming obstacles unique to medical education. Apps provide individualized learning materials on all health care competencies and can facilitate evaluation, assessment, and feedback on Entrustable Professional Activities (EPAs) which frequently intersect more than one competency. Mobile devices, like iPads, can be powerful tools for accessing and organizing information as well as utilized for didactic and clinical education, including facilitating patient education and communicating with interprofessional teams. This interactive workshop will be paced for the participants' level and will introduce participants to mobile apps⁴⁻⁶ used in medical education across the continuum. Learners should bring their devices as they will practice using their iPads and share their experiences leveraging mobile apps.

King

Understanding knowledge gaps as a driver of self-regulated learning: encouraging and guiding the process

Gruppen, Larry, University of Michigan Medical School

Objectives: Participants in this workshop will review key elements of the theoretical frameworks for self-regulated learning and focus specifically on the importance of identifying a knowledge gap in the process. We will examine the process of gap identification and the motivational influences and consequences. From these conclusions, we will evaluate current medical school educational practices and how they may affect both gap identification and motivation (in positive and inhibitive ways). We will

then propose suggestions for improvements and interventions that could foster this part of the self-regulated learning process.

Rationale: Both educational theory and medical school accreditation emphasize the importance of self-regulation in fostering health care providers who will maintain and improve their knowledge and skills in practice. However, this set of behaviors requires an awareness of, and a willingness to address, a knowledge gap by the individual in order to provide the “energy” that drives self-regulation.

Burkhart B

Improving Our Clinical Experiences: Sharing of Best Practices for a Positive Learning Environment

Moscoso, Lisa Washington University School of Medicine, Hageman, Heather Washington University School of Medicine, Lipscomb, Wanda Michigan State University College of Human Medicine, Mavis, Brian Michigan State University College of Human Medicine, Dardas, Agnes, Washington University School of Medicine

Objectives: Participants will be able to:

1. Understand the nuances in defining mistreatment.
2. Distinguish between the advantages and disadvantages of multiple reporting mechanisms.
3. Identify methods to respond to negative behaviors.
4. Familiarize themselves with best practices among peer institutions.

Rationale: Much warranted attention has been paid lately to the medical school learning environment. Our goal as educators is to ensure a positive, respectful, and inclusive learning environment for all learners in our educational programs, as recently endorsed by the AAMC’s Statement on the Learning Environment. The LCME also focuses an accreditation lens on mistreatment through two specific standards: MS31A/Element 3.5, regarding a learning environment which promotes the development of explicit and appropriate professional attributes; and MS32/Element 3.6, which says a program must define and publicize the standards of conduct for the faculty-student relationship as well as written policies for addressing violations of the standards. As established in many publications and the AAMC’s Graduation Questionnaire, mistreatment most frequently occurs in clinical environments. Thus, this session will focus on the clinical setting.

Burkhart A

MESRE Consultations

Discussant: Anna Maio, MD, Creighton University School of Medicine

1. Linguistic Study of Portfolio Coaching during the First Year of Medical School

Brill, Seuli, Ohio State University College of Medicine

Background: Portfolio coaching contributes to the professional development of medical students. The Ohio State University College of Medicine (OSUCOM) integrated portfolio coaching into its curriculum 3 years ago. Alongside faculty portfolio coaches, medical students participate in face-to-face and web portfolio-based reflective processing of: 1) learning habits; 2) academic performance; and 3) clinical experiences. These exercises help medical students cultivate a pattern of ongoing, sustained, self-motivated, professional growth. The OSUCOM is simultaneously conducting implementation and

investigation of the Portfolio Coaching Program to inform educational “best practices.” We have designed a project titled, “Linguistic Study of Portfolio Coaching during the First Year of Medical School” to identify student/ portfolio coach linguistic strategies that encourage or hinder advanced self-reflective behaviors. While portfolio coaching furthers medical student professional development (Aronson L, 2011; Driessen EW, et al., 2005), a knowledge gap explaining how student/ coach communication strategies yield advanced self-reflective skills still exists.

Methods: To fill this gap, this mixed methods project applies discourse analysis to 12 months of longitudinal data collected on 8 pairs of portfolio coaches and first-year medical students. Student/ coach dyads will be recruited and consented for study participation. Recordings of 20 scheduled student/ coach interactions will be collected over 12 months. Analysis of student/ coach evaluations (assessing self-reflection facilitation and skills) will identify dyads selfreporting advanced reflective behaviors (top 20% of evaluation scores) vs. underdeveloped reflective behaviors (bottom 20% of evaluation scores). Four student/ coach recording sequences (8 total) from the top and bottom evaluation quintiles will be transcribed using detailed transcription. Researchers will pursue linguistic analysis (Gumperz, 1982; Tannen, 2005) of longitudinal series transcripts to identify student/ coach communicative strategies that foster or hinder growth in self-reflection by examining language, context, and other cues present in coach/student conversations. The applied discourse and thematic techniques will determine elements such as: 1) content; 2) amount of time talking for each party; and 3) non-language communication (e.g. pauses, discomfort, laughter) in the transcripts.

Results: This study is in progress.

Conclusions: We will translate study findings into a communicative toolkit for Portfolio Coach faculty development. This toolkit will empower coaches in nurturing advanced student self-reflection skills. We will also use preliminary study findings to pursue funding for future larger studies. At this juncture, the research team welcomes feedback on this protocol to discuss: 1) methodology; 2) analysis techniques; and 3) potential study applications. This feedback will be used to improve study rigor for sound educational application and competitive future funding potential.

2. HIV Screening Outcomes Quality Improvement Study

Misak, James, The MetroHealth System

Background: The HIV Screening Outcomes Quality Improvement Study was conducted to improve the rate of HIV screening in adults seen in 14 primary care clinic sites throughout the MetroHealth System in Cleveland, Ohio, and to satisfy one of the five measures required to complete the quality improvement portion of The National Center for Quality Assurance Patient Centered Medical Home recognition process.

Methods: 14 primary care clinic sites within the MetroHealth System were asked to assemble quality improvement teams, each consisting of a receptionist, a medical assistant, a registered nurse, a nurse care coordinator, and a physician who serves as the site’s medical director. The teams were delivered quality improvement training using the Plan-Do-Study-Act (PDSA) cycle method. The outcome of improved rates of HIV screening within each clinic was a prescribed aim, but the intervention was left to the design of the individual clinics. The PDSA

cycle was designated as a four month period, from July 1 of 2014 to October 31 of 2014. Each clinic received quality improvement coaching throughout their PDSA cycle and were encouraged to share their best practices and barriers with other clinics. Patients included in the study were between the ages of 18-64 and counted as screened if they completed the HIV test. Known HIV positive patients were excluded from the measure. Site-specific baseline data were given to each of the individual clinics at the onset of the project. Monthly site-specific data updates were provided to each clinic during the 4 month trial period.

Results: The first 4 months of data revealed significant improvement in the rates of HIV screening for each of the individual 14 sites. The baseline data for all 14 sites combined (counting patients with at least one visit during the time period 1/1/14 to 4/30/14) was 70.32% (N=37,674). Patients with at least one visit between July 1, 2014 and October 31, 2014 had an improvement in the rate of screening to 83.82% (N=14,598).

Conclusions: These preliminary results demonstrate that a minimal amount of quality improvement training and coaching, in conjunction with the formation of multidisciplinary, primary care site-based QI teams, can produce significant improvements in the rate of HIV screening in the primary care clinic environment. It is anticipated that, with further study, these outcomes will prove to be translatable to other patient care measures relevant to primary care.

Bellows EF

MESRE Oral Abstract Presentations Session: Students

(Presentations are allotted 15 minutes)

Moderator: Klara Papp, PhD, Case Western Reserve University

1. The Intersection of Gender, Clinical Evaluations, and Formal Assessments: Averting Gender Bias during a Third Year Obstetrics and Gynecology Clerkship

Kaljo, Kristina, Jacques, Laura, Farez, Rahmouna, Treat, Robert, Davis, Joseph, Lund, Michael, Medical College of Wisconsin

2. Implicit White Preference in Medical School Admissions

Capers, Quinn, The Ohio State University

3. Medical Student Perceptions of Cost-Conscious Care in an Internal Medicine Clerkship: A Thematic Analysis

Tartaglia, Kimberly, The Ohio State University Medical Center

4. The Influence of Gender on the Evaluation of High-Risk Behaviors in an Adolescent Patient: An Examination of Medical Student OSCE Performance

Craker, Nicole, Wright State University Boonshoft School of Medicine

Hopkins

COSR Business meeting

11:00 am – 12:00 pm Discussion and post conference feedback

Bellows A-C

CONFERENCE ADJOURNS

Thanks to Our Reviewers:

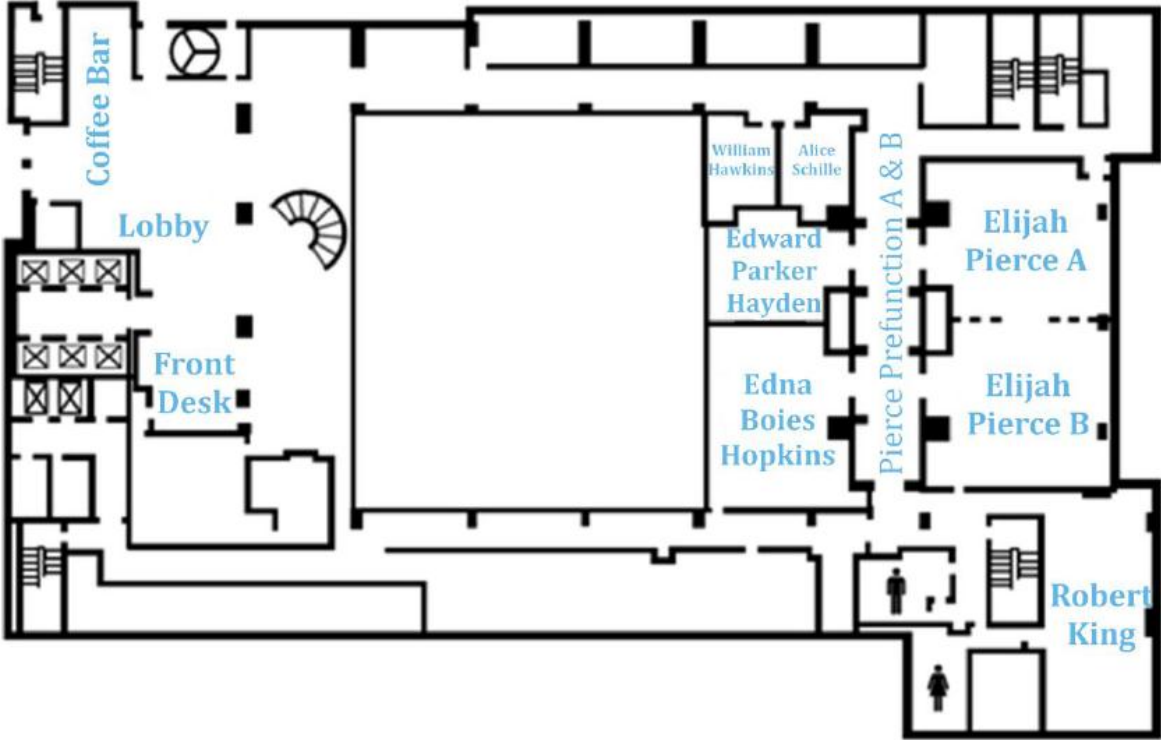
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Amiri, Leila
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Appel, Joel
Bahr, Timothy
Baker, Pamela
Beck, Gary
Bernat, Carrie
Bierer, S. Beth
Blood, Angela
Bobbs, Melanie
Bonaminio, Guilia
Bowler, Carrie
Boyd, Keith
Boyle, Mary C.
Brady, Judith
Bragg, Dawn S.
Brisson, Greg
Brown, Diane L.
Bunger, Paul C.
Caron, Aleece
Charles, Stephen
Chelladurai, Cary
Chheda Shobhina G.
Cianciolo, Anna
Cleppe, Virginia H.
Cronau, Holly R.
Davis, John A.
Davis, Stephen S.
Dereski, Mary O.
Diaz, Kristine M.
Djuricich, Alex
Dyer, Carla A.
Espiritu, Baltazar R.
Farlow, Janice
Farnan, Jeanne
Ferguson, Kristi J.
Filak, Andrew T.
Foshee, Cecile M.
French, Judith
Ghazal, Feraz
Gill, Hardeep
Golden, Andrew
Greuner, Gregory
Grieco, Alex
Gruppen, Larry D.
Gunderson, Anne J.
Hall, Elissa
Hall, James W.
Han, Heeyoung
Harper, James
Harris, Ilene
Hartman, Teresa
Hayes, Meaghan
Hearns, Valerie L.
Hekelman, Francine
Hickey, Daniel P.
Hoffman, Kimberly
Hopps, Josh
Hortsch, Michael
Hosokawa, Michael
Huded, Jill
Huelsmann, Erica Janell
Huggett, Kathryn N.
Hull, Alan
Hummel, Diane
Hurtubise, Larry
Jadwin, Joyce E.
Johnstone, Candice
Kaljo, Kristina
Kamin, Carol
Karius, Diane R.
Kavanagh, Maurice J.
Kirkham, Karen
Klaman, Debra

Kung, Sunny
LaBlance, Sandra
Larsen, Douglas
Lehmann, Corinne
Liebson, Philip R.
Lindemann, Janet C.
London, Daniel
Lucia, Victoria
Lynn, Joanne
Lypson, Monica L.
Madura, Corey
Maio, Anna
Marcdante, Karen
Marks, Sharon R.
Martin, Alison
Mavis, Brian
McBrien, Sarah
McClain, Elizabeth K.
McKinney, Vicky
Mehta, Lina
Meleca, Joe
Mendez, Jennifer
Metting, Patricia
Michaels, Robin L.
Michelfelder, Aaron
Misak, James
Misra, Lynda
Mulligan, Margaret
Nalin, Peter
Ng, Henry
Ojano-Sheehan, Olivia
Olteanu, Mircea
Paul, Gina
Perkowski, Linda C.
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Robertson, Sylvia
Rogers, Brenda

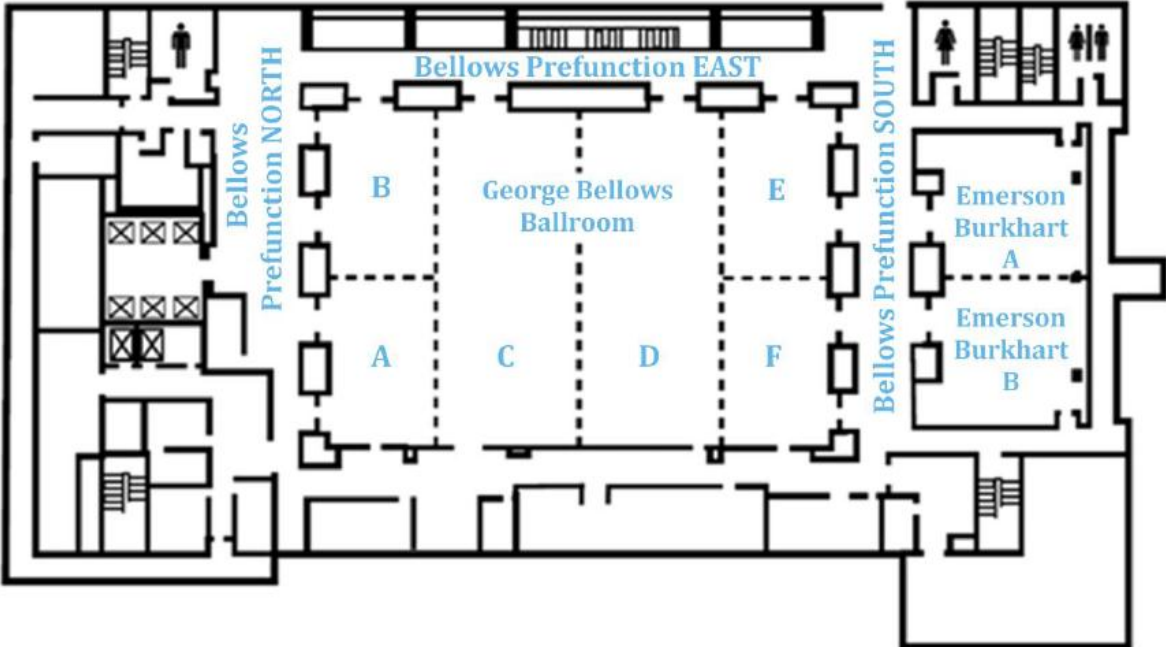
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Sheridan, Leah
Shinkunas, Laura
Simanton, Ed
Simpson, Deborah
Sinewe, Marcus
Sood, Lonika
Stalburg, Caren
Stillwell, Christopher
Sullivan, Christine
Swanberg, Stephanie
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Thorp, Laura E.
Treat, Robert
Uhley, Virginia
Ulrich, Brian
Verbeck, Nicole
Vlasses, Fran
Volerman, Anna
Wales, Paula S.
Way, David P.
Whaley, JD
White, Mary T.
White, Michael D.
Wickham, Gerald P
Wilke-Zemanovic, Diane
Windover, Amy K.
Wolansky, Alexandra
Woods, Majka
Wright, Katy
Yutzenka, Gerald
Zabinski, Jeff

The Hilton Downtown Columbus Floor Plans

Lobby Level

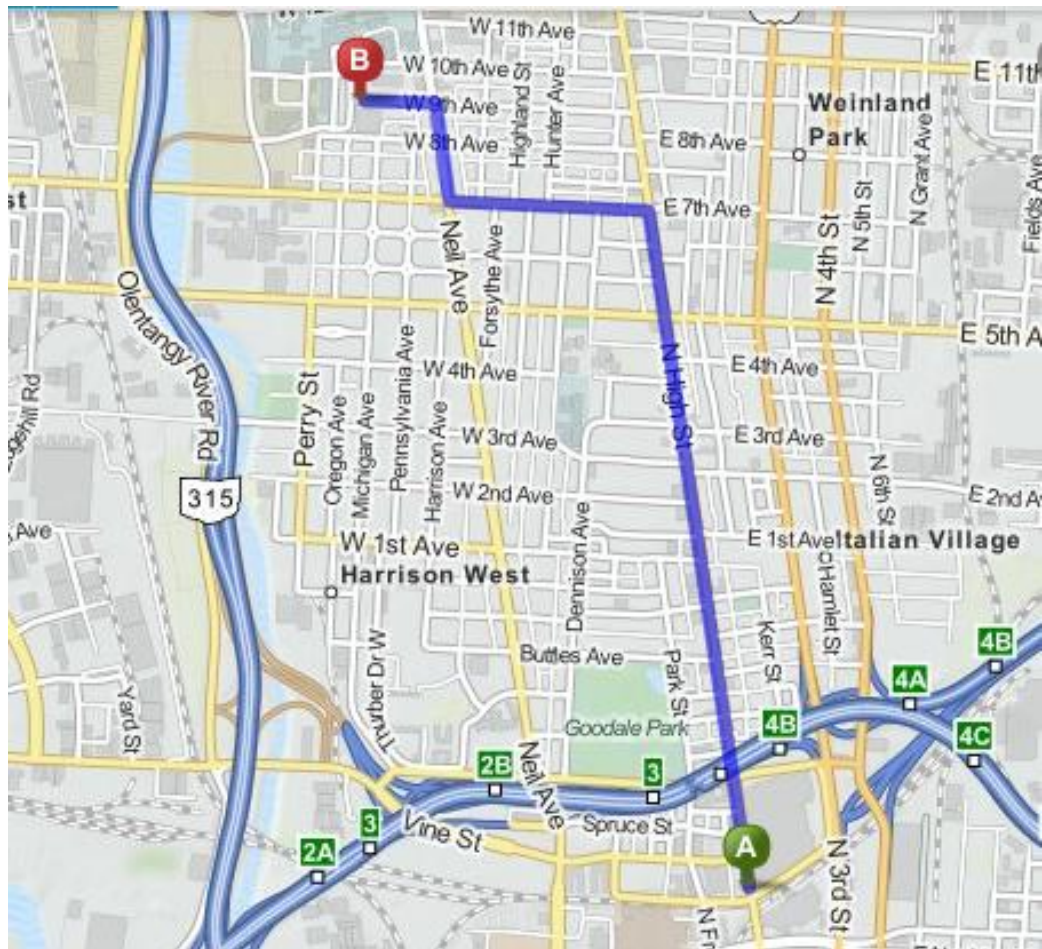


Lower Level



Driving directions from Downtown Hilton to The Ohio State University School of Medicine

- Go north on N. High street towards Vine street. (1.4 miles)
- Turn left onto King Ave. (0.4 miles)
- Turn right onto Neil Ave. (0.2 miles)
- Turn left onto W. 9th Ave. (0.1 miles)
- 370 W. 9th Ave is on the right.



Abstracts

Friday, April 10, 2015

Concurrent Sessions 9:30-11:00

MESRE Oral Abstract Presentations Session: Instruction

Physical Findings Progress Test at a Medical School

Han, Heeyoung, Southern Illinois University

Background: Detection of physical findings is part of the core of clinical performance ability that medical education curriculum should teach, assess, and remediate. The purpose of this study is to investigate medical students' physical findings skills progress across all four years of the curriculum to understand student achievement of these skills over time. The findings of this progress study can guide individual students in their developmental progress and curriculum improvement by informing faculty of students' longitudinal and cross-sectional progress in their physical findings skills.

Methods: We developed a computer-based physical findings progress (PFP) exam to measure students' diagnostic abilities of visual and auditory discriminations. Sixty-five test items were created in collaboration with six clinical faculty members. The exam includes detection and description of ecg, x-ray, heart sounds, breath sounds, skin lesions and movement findings, which were based on the book, Evidence-Based Physical Diagnosis. The exam was implemented at the beginning of the year with incoming students in July 2014 (Year 3) and August 2014 (Year 1, Year 2, and Year 4). Descriptive statistics and one way ANOVA were used to determine group differences in physical findings detection.

Results: Two hundred eighty-two students completed the PFP exam (98%). Students spent 31 minutes to complete the exam on average. The reliability of the exam was .860 (Cronbach's Alpha). Descriptive statistics showed that the data have normal distributions for each year. One way ANOVA and Tukey HSD showed that students' physical findings skills increased by training year [$F(3, 278)=230.04$, $p=.000$]: Year 1 (Mean=21.35, SD=4.66), year 2 (Mean=28.13, SD=5.00), year 3 (Mean=35.91, SD=5.19), year 4 (42.51, SD=5.70). While group means increased, within group variation did not change across four years. That is the class did not become more homogeneous in physical findings skills abilities as they went through the medical curriculum. Box plots showed that performance of the bottom quartile of incoming fourth year students was not much higher than the performance of the top quartile of incoming first year students who had not had medical training.

Conclusions: Physical findings skills of the medical students increased by training year. However, students' physical findings skills within classes did not become more uniform suggesting that growth is opportunistic rather than through planned curriculum.

Development and evaluation of a vertically integrated on-line radiology curriculum

Lim-Dunham, Jennifer, Loyola University

Background: Principles of the cognitive apprenticeship model were used to design a radiology curriculum in which students practice radiological skills using electronic, interactive case-based modules embedded within clinical third year clerkships.

The purpose of this paper is to describe the development of a vertically integrated on-line radiology curriculum and evaluate its efficacy using a mixed method approach.

Methods: The curriculum was developed over a two-year period. Student participation was voluntary in the first year and mandatory in the second year. For quantitative curriculum evaluation, student metrics for voluntary versus mandatory groups were compared using independent sample t-tests and Pearson's correlation coefficients. For qualitative analysis, responses from a survey of students were organized into defined themes using consensus coding.

Results: When there was voluntary participation, a strong correlation existed between the number of cases a student completed and that student's radiology exam grade ($r=.248$). Mandatory participation significantly elevated the mean radiology exam score compared to the voluntary group ($p < .01$). Of the five dominant themes that emerged from consensus coding, three described aspects of the curriculum that students found enhanced their learning, and the other two described valuable outcomes.

Conclusions: The vertically integrated on-line radiology curriculum can positively impact student performance and learning process in the context of the cognitive apprenticeship model.

A Self-Directed Preclinical Course in Ophthalmic Surgery

Wu, Dominic, Alpert Medical School of Brown University

Background: Medical students receive limited exposure to ophthalmology and ophthalmic surgery in the preclinical curriculum. This educational gap is important as age-related eye diseases such as cataract, age-related macular degeneration and glaucoma are expected to become more prevalent with the growing elderly population. These trends underscore the need for additional experience in ophthalmology and ophthalmic surgery. To address this gap, the authors designed a self-directed preclinical elective course for students who wish to increase the depth and breadth of their knowledge of ophthalmic surgery.

Methods: The course was offered in the 2013-14 school year to all (245) first- and second-year students at the Alpert Medical School; an existing elective on basic ophthalmology was a prerequisite. The course had three components: (1) four web-based didactic modules with slide sets, surgical procedure videos and animations, and mandatory pre and post-module quizzes to assess for competency (cornea transplant, trabeculectomy, intravitreal injection, blepharoplasty, botulinum toxin injection, pars plana vitrectomy); (2) a 3-hour interactive virtual surgery session on the EyeSi® (Version 2.4, VR-Magic, Mannheim, Germany) focused on common surgery-related tasks (anti-tremor, forceps control, vitrector, and laser coagulation); (3) two shadowing experiences in the clinic and in the operating room. Each student completed a pre- and post- course Likert-style questionnaire that assessed exposure to ophthalmology, favored components of the course, and interest in ophthalmology as a career.

Results: 18 first- and second-year students (7.1% of student body) completed the course (81.8%; 18/22 completion rate). Most students (76.5%; 14/18) felt there was inadequate exposure to ophthalmology in the medical curriculum. Students scored a mean of 44.0% on pre-module assessments and 97.0% on post-module assessments. Students had a mean improvement of 138.9%, 234.6%, 109.8%, and 61.1% between the pre- and post-course quizzes in the four modules, respectively. All students (18/18) completed the post-course questionnaire: they all recommended the course to other medical students and increased their understanding of ophthalmology as a career. Most students favored the practical aspects of the elective (44.4%; 8/18) and virtual surgery simulation (44.4%; 8/18). The students' interest in a career in ophthalmology changed minimally, with the highest proportion of students selecting "likely" before (50.0%; 9/18) and after (55.0%; 10/18) the course.

Conclusions: This flexible course with web-based didactics, virtual surgery, and shadowing experience increased preclinical medical student knowledge of ophthalmic surgery.

CEPAER (Core Entrustable Professional Activities for Entering Residency): Perspectives across the Continuum

Farnan, Jeanne, University of Chicago

Background: Historically, the "handoff" from undergraduate to graduate medical education involves minimal communication about student skill level. In addition, recently the question of student readiness for transitioning to the training environment has been raised. The AAMC (Association of American Medical Colleges) core entrustable professional activities for entering residency (CEPAER) aim to introduce more robust expectations for the transition to post-graduate training. To date, little has been done to engage both UME and GME leadership in an effort to identify how to teach and assess readiness for these skills. In addition, no data have been collected to assess students' perceptions of their preparedness for these tasks.

Methods: As a part of the University of Chicago's annual Medical Education Day, a retreat of clerkship directors (CD), program directors (PD), and UME and GME leadership was held to facilitate communication regarding these issues. Faculty perceptions of student readiness to accomplish the CEPAER were assessed via paper-based voting regarding student readiness of Day 1 of training. Participants were asked to vote on the EPAs that they believed students were reasonable to be entrusted

with on day one of residency. Individuals indicated a yes or no response on a large tally board of the EPAs, using color-coded role specific stickers to indicate a response of "yes". Responses were not blinded. All role-based agreements were tallied to determine overall agreement by role. In addition, student readiness for the CEPAER were assessed in an anonymous, online survey prior to graduation, assessing their readiness to complete the CEPAER tasks on Day 1 of their post-graduate training. Descriptive statistics were performed and, where appropriate, chi-squared tests were used to determine differences between populations.

Results: 56 faculty (13 CD, 25 PD, 18 UME/GME leadership) participated in the retreat and 60/101 graduating students participated in the online survey (59%). The majority (greater than 50% in each group) of CD and PD agreed that the following EPAs were reasonable to be entrusted on day one of post-graduate training: gather a history and perform a physical examination (EPA#1); develop a prioritized differential diagnosis and select working diagnosis (EPA#2); provide documentation of an encounter in written or electronic format (EPA#5) and provide an oral presentation of an encounter (EPA#6). CD and PD believed that the following EPAs were NOT reasonable to expect on day one of training (<30% faculty in each group agreed): give or receive a patient handover (EPA#8); recognize a patient requiring urgent care (EPA#10); obtain informed consent (EPA#11); perform the procedures of a general physician (EPA#12) and identify systems failures and contribute to a culture of safety (EPA#13). Students and faculty agreed the EPAs least likely to be achieved by graduation were: performing the procedures of a general physician, identify systems failures, give or receive a patient handover and obtain informed consent. Student data revealed agreement (>50% of students reporting) with preparedness for completion of all the EPAs on day one for all EPAs except participate as a member of inter-professional team (EPA#9). Differences were also noted on student preparedness to recognize patients requiring urgent care, or the ability to enter and discuss orders or prescriptions.

Conclusions: Differences exist in faculty and student perceptions of preparedness to address these activities in postgraduate training. Adoption of agreed upon expectations for graduating medical students will require robust discussion across the continuum of undergraduate and graduate medical education as well as ongoing discussion regarding targeted curriculum development and assessment. Future directions include creating and evaluating curricula focused on preparing, and assessing, students' readiness for the transition to post-graduate training and tools to help address the entrustment decision.

Concurrent Sessions 2:00-3:30

MESRE Oral Abstract Presentations Session: Assessment

Student performance during NBME exams using a hybrid integration model for clerkships

Hoyle, Chad, Ohio State University Medical Center

Background: In 2012, the OSU College of Medicine launched its LeadServeInspire (LSI) Curriculum with Part 2: Clinical Applications beginning June 2014. Part 2 is a 12-month clinical immersion that is comprised of three integrated curricular units (rings.) Each ring integrates 3 or more disciplines across 15 weeks. Surgery and Obstetrics are linked with pathology and anesthesiology. Family Medicine and Pediatrics are paired with ambulatory adult medicine and geriatrics. Inpatient Internal Medicine, Psychiatry, and Neurology comprise the third ring. Although our curriculum utilizes block rotation time (2-4 week assignments,) it allows for revisiting of a clinical discipline throughout the entirety of the ring. Additionally, didactics, clinical skills labs, and direct observation are conducted in a fully integrated manner. At the end of each ring, students take 2 or 3 NBME exams in a given week in addition to an OSCE and clinical practical exam. This study seeks to analyze the effect of the LSI Curriculum on students' performance on the NBME shelf examinations as compared to student performance from the previous academic year.

Methods: We analyzed the average NBME shelf exam scores by subject after the first ring of Part 2 compared to students completing the same rotations in the first two clerkships of the 2013-14 academic year. Non-paired t-tests were conducted to compare average test performance across all NBME subject exams and by subject. Failure rates were also examined.

Results: From June to October 2014, 183 students completed their first ring (Part 2 LSI) in comparison to 238 students in the 2013-14 academic year. Although statistical analysis is ongoing, the mean score for OSU students was above the national average at all points measured for this academic year. Additionally, average NBME scores across all subjects were significantly higher in Part 2 than the first clerkship of the 2013-14 year ($p < 0.005$.) Scores for LSI students were significantly higher than the corresponding clerkship in the previous academic year in internal medicine, pediatrics, and family medicine with an improved score that trended toward significance in all other clerkships. Seven students (3.8%) did not pass an NBME exam during first administration of Part 2 and no student failed more than one exam. Eighteen students (7.6%) failed an NBME exam during the first two clerkships of the previous academic year with 2 students failing more than one exam.

Conclusions: Although longitudinal curricula have demonstrated clinical efficacy and positive student perceptions, this approach can be logistically difficult for large class sizes such as ours. Our curriculum offers a hybrid approach to integration by using a blocked integration design across an entire large medical school class. Despite taking multiple NBME shelf examinations at once for each larger rotation, student performance was comparable to prior performance with areas of improved performance in certain subjects. Additionally, failure rates were lower for this initial administration of the exams. We suspect engaging students in a broader study for longer periods of time may improve retention of knowledge. Additional statistical analysis of existing outcomes and further study of medical knowledge outcomes, including Step 2 CK scores, is warranted.

Progress Redefined: Measuring Performance on an Integrated Progress Clinical Skills Exam (PCSE) across Four Years of Medical School

DeMuth, Robin, Michigan St. Univ. College of Human Medicine

Background: Progress testing is a method of assessment that involves evaluating students on a complete body of knowledge repeatedly over a longitudinal curriculum. Medical schools have used progress testing to assess medical knowledge for many years. There is no published literature on the use of this method to assess clinical skills. The purpose of our study was to validate the use of progress testing for a clinical skills assessment and to provide baseline data for use of this assessment in a new curriculum.

Methods: We administered a Progress Clinical Skills Examination to 38 medical students (9 first years, 13 second years, 13 third years and 3 fourth years) over two days. The examination consisted of eight standardized patient encounters. Each encounter was followed by three short answer questions that related the encounter to underlying basic, social or clinical science. We assessed student performance using standardized patient checklists, global rating scales, rubrics for short answer questions and survey data.

Results: Both standardized patient and faculty ratings of communication skills, history taking skills and examination skills increased with each year of experience from first year to third year. Global evaluations of student performance by faculty also increased from first year to third year. Most students thought the examination was a fair test of both their clinical skills and their basic science knowledge.

Conclusions: The PCSE appears to be a valid measure of medical students' clinical performance insofar as performance is responsive to time in our current curriculum. Data from this assessment will provide a baseline for a new curriculum that will use progress testing as a cornerstone of its assessment strategy.

A Novel Approach to Assessing Professionalism in Preclinical Medical Students Using Paired Self- and Peer-Evaluations

Emke, Amanda, Washington University School of Medicine

Background: Professionalism is an important attribute for physicians and a core competency throughout medical education. The assessment of professionalism in preclinical training, which often focuses on individual knowledge acquisition, continues to present challenges. We propose a novel approach to preclinical assessment of medical student professionalism.

Methods: Second-year medical students completed peer- and self-assessments of professionalism in two courses (Pediatrics and Renal/Genitourinary Diseases) following a series of Team-Based Learning exercises. Assessments comprised identical 9-point Likert scales. Correlational analysis and paired-samples t-tests were used to examine the stability of the associations between peer- and self-assessments over time and courses. A difference score was calculated for each student by subtracting their average self-assessment rating from their average peer-assessed rating. Negative scores indicated lower self- versus peer-assessment; positive scores indicated higher self assessment ratings relative to the average peer-assessment ratings.

Results: Peer and self- assessment data were collected for 248 students over two academic years. Spearman's correlations revealed a significant positive relationship ($p < 0.01$) between peer- and self-assessments in each course. Across all measured time-points, the majority of difference scores were negative (>65%). A small but distinct subgroup (< 15%) of students consistently demonstrated positive difference scores; this was stable across courses. Paired-samples t-tests revealed that average peer- and self-assessments were both significantly lower at the second time of measurement ($t_s > 2$, p), but average difference scores remained negative at both time-points and did not differ ($t < 1$, $p = ns$).

Conclusions: While data analysis has not been fully completed, most students demonstrate a humility bias when self-assessing professionalism reflected in consistently lower self-ratings of professionalism compared to those provided by peers. Notably, a small but distinct subgroup of students consistently rated themselves more highly in professional attributes relative to the ratings provided by their peers. Membership in this "lower-insight" sub-group may be a marker for future professionalism concerns as to be determined by correlation with clerkship professionalism evaluations. If so, simultaneous measurement of peer- and self- assessments of professionalism at multiple time-points in the preclinical curriculum may serve as a useful tool for identifying students at risk for professionalism concerns in subsequent training.

Internal Consistency Reliability of Medical School Interview Scores

Zaidi, Nikki, University of Michigan

Background: Multiple mini-interviews (MMI) represent a measurement process that assesses attributes across domains such as ethics, communication, and teamwork. The MMI typically use short-interview "stations" in which interviewers use evaluation forms consisting of multiple, discrete items. Reports suggest that consistency among attributes assessed within a single MMI station is very high, even when these attributes intend to represent distinct constructs (Lemay et al., 2007; Zaidi et al., 2014). Conversely, internal consistency for the same attributes assessed across stations has been shown to be much lower (Dowell et al., 2012). Despite this, most MMIs continue to use multiple-attribute forms for single stations. This study critically examines the within-station and between-station internal consistency reliability of scores to encourage informed alignment between intended station content and assessment protocols.

Methods: A modified version of the MMI was adopted at a Midwestern medical school to select the entering class of 2016. Deliberate blueprinting was conducted to identify attributes for assessment and align attribute-rating items with station content. Using a sample of 298 applicants, internal consistency was examined at both the station and item levels. Cronbach's alpha was computed for attribute-rating item scores—both across attributes within each station and within attributes across stations.

Results: Within-station alphas, computed from items covering multiple attributes, were very high (0.903-0.954). Alternatively, for items covering the same attribute across stations, consistency was much lower (0.176-0.510). Therefore, there was consistency within stations among items actually intended to measure discrete attributes; and there was far less consistency across stations for items intended to measure the same attribute.

Conclusions: These findings suggest little variation in applicants' discrete attribute scores within a single station. The low-to-moderate consistency for item scores across stations is consistent with reports in the literature and may suggest evidence of context specificity (Eva et al., 2004). However, because the stations used in this study were deliberately blueprinting to assess specific attributes, greater variation among discrete attribute scores within a station was expected. The persistent high internal consistency at the station level suggests that despite such deliberate efforts, interviewers still do not differentiate scoring

for discrete applicant attributes; or, alternatively, these results could be evidence of “halo” rater errors wherein interviewers develop impressions of applicants and assign all item scores consistent with this overall impression (Lance & La Pointe, 1994). These preliminary findings suggest admissions programs should design single-attribute stations and single-attribute assessments for MMI protocols.

Predicting Underrepresented Student Medical College Admissions Test (MCAT) Scores with Math and Vocabulary Testing in a Post baccalaureate Premedical Education Program.

Metz, Anneke, Southern Illinois University School of Medicine

Background: African-Americans, Hispanics and Native-Americans continue to be employed as physicians, and enrolled in medical colleges, at numbers smaller than their proportion in the population. To address this underrepresentation, the MEDPREP program at Southern Illinois University Carbondale has for over 40 years selected students with academic profiles that suggests they are not prepared for medical school, and improved their academic skills, GPAs and MCAT scores to make them into qualified medical school candidates. Each year, approximately 200 students apply for 36 slots in the program. To select students with the potential to become qualified medical school applicants, students are interviewed and given a battery of academic tests. Because the MCAT score carries great weight in medical college admissions, we aim to predict a student’s eventual ability to score well on this exam. This work is significant because entering a program such as MEDPREP is expensive and our applicants tend to come from lower socio-economic brackets where attending represents a significant fiscal stress. The purpose of this study is to determine the effectiveness of two academic tests, the Nelson Denny Reading Test (ND) and the Developing Cognitive Abilities Test (DCAT) in predicting the eventual MCAT score of students completing the program.

Methods: Prior to program entry, students were tested with the DCAT and the ND between 1991 and 2013. 707 students (90% African American, 8% Hispanic) accepted into the program were tracked. These students took the MCAT exam after one year of intensive academic intervention. Statistical analyses on matched DCAT, ND and MCAT scores were performed using the Statistical Program for Social Sciences (SPSS) v. 20.

Results: Preliminary analysis indicated the DCAT quantitative reasoning (DCATQ -math through algebra) section and the Nelson Denny 16th grade vocabulary section (NDV) showed the highest correlation with outgoing MCAT scores. The average outgoing MCAT score was 23 (range 10 - 36). We then determined the likelihood of the students attaining a minimum of 24 on the MCAT based on DCAT and ND performance. Students that scored 40% correct or less on the DCAT had 0% chance of reaching a 24, while those with 50% or less were nearly 3x less likely to score a 24 than those scoring higher on the DCATQ. Similarly, 0% of students scoring less than 66% on the NDV attained a 24, and those scoring less than 81% were nearly 3x less likely to attain the 24 than those scoring higher. Moreover, students scoring poorly on both tests were nearly 10x less likely to score a 24 than students who scored above 50% on DCATQ and/or above 81% on the NDV. 80% of the students were admitted to medical schools.

Conclusions: The combination of testing with basic mathematical skills and a senior college level vocabulary exams can help predict a student’s potential for academic rehabilitation for minority or SES disadvantaged students entering a premed baccalaureate program.

STUDENT SHOWCASE:

Special Committee on RMC Environment (SCORE)

Staci Aubry, Erica Huelsmann, Jay Behel, MadhuSoni, Patrick McIntire, Samuel McGownan, Rush Medical College

Objective/Purpose: To foster a positive learning environment and address any incidents of mistreatment in a way that is accessible to students without fear of repercussions.

Need for Innovation/Practice: Every medical school is charged with fostering a positive learning environment while effectively addressing incidents of student mistreatment. As has been well documented (e.g., Fried, et al., 2012), this charge has proven vexingly complex in its execution. In response to this

challenge, Rush Medical College (RMC) has launched the Special Committee on the RMC Environment (SCORE).

Methods, Materials and Resources used: SCORE is RMC's most high-profile mechanism for reporting student mistreatment and provides a venue to highlight positive aspects of the learning environment. SCORE is a student-led group that is actively supported by faculty advisors and institutional administrators. The student-led aspect of the group is essential in fostering a safe venue for reporting mistreatment. Similarly, SCORE adopted an off-site, online reporting mechanism as a means of providing an option of true anonymity. However, other options also exist to report mistreatment at the student's discretion and comfort, such as face to face interactions.

Outcomes: Since initiating its online reporting mechanism in March 2013, SCORE has received nearly 40 distinct reports of alleged mistreatment. Reports have included a range of behaviors perpetuated by faculty, staff and fellow students. These reports have been investigated, discussed with appropriate leadership and have routinely led to meaningful action plans designed to not only remediate the reported behavior but to prevent future incidents, heighten awareness of SCORE, and increase sensitivity to the learning environment.

Strengths and Areas for Improvement: Additionally, the AAMC's 2013 Graduation Questionnaire (GQ) demonstrated that between 2012 and 2013, there was a 23.5% increase in RMC student awareness of procedures for reporting mistreatment, although this increase still placed RMC below the national average of 71%. Unsatisfied with these results, SCORE and RMC faculty enhanced their effort to educate all students on the processes for reporting mistreatment. In contrast to the response on the 2013 GQ, a recent survey of medical students in all RMC classes demonstrated that 97.9% of students overall reported being familiar with the mechanisms to report mistreatment. Moreover, in the 2014 GQ, 95.7% of RMC respondents endorsed an awareness of reporting procedures, placing RMC well above the national average. SCORE also provides learning environment presentations at the class, departmental, college and institutional level, promulgates an annual learning environment report and sponsors a Positive Learning Environment award every year.

Feasibility of Program Maintenance/Transferability: Every institution could easily adopt a similar program in hopes of addressing mistreatment in medical education. Because SCORE is a student-led group, class wide elections can be held each year to appoint students to lead the committee with volunteer faculty support.

Comparison of a Faculty-Taught and Student-Taught Ultrasound Course: Are Students Effective Teachers?

Erich A. Stauder, Michael Peyton, Joelle Gabet, Caroline Pace, Medical College of Wisconsin

Background: Ultrasound (US) is an inexpensive and noninvasive method for patient evaluation, and use of US in a wide array of medical specialties is growing. Also, while US education is included in many residency programs, US education is typically not part of medical school curricula despite a demonstrated desire among medical students (MS) to learn US. Limitations of US curriculum implementation may include lack of: resources, time, and faculty US instructors. Since US is an operator-dependent skill, US training is most effectively accomplished in a hands on environment. While faculty might struggle to find time to teach this experience to a large cohort, previous research has shown that MS can be as effective as medical school staff in delivering US-based anatomy curricula. US training in medical school may help MS in their respective residency programs, but only if they retain their US training for the long term. Therefore, the purpose of this study is to determine the effectiveness and retention of a peer-to-peer taught US course for 2nd year MS.

Methods: Using a curriculum previously developed by Medical College of Wisconsin (MCW) MS, two 3rd year MS and one 2nd year MS acted as US instructors after completing rigorous US training and at least 15 US educational scans in the MCW Emergency Department under faculty oversight. The FAST (Focused Assessment with Sonography in Trauma) US exam was taught by MS instructors. First, participants completed online learning modules from the Society for Ultrasound in Medical Education, and then attended an MS-led didactic US presentation. MS participants then attended two standardized patient sessions and one simulator session for abnormal findings. Post-session quizzes and surveys measured content knowledge as well as satisfaction with curriculum and perceived US competence and confidence

in identifying structures. A final quiz and exam using the simulator and standardized patient assessed image acquisition, structure recognition, scan interpretation, and time to completion. Retention study participants returned to take final practical and written exams at least one semester after initial enrollment.

Results: Final exam average time to completion for the hands on standardized patient were 3:56 and 2:45 for Fall and Spring, respectively, and simulator time to completion was 4:46 and 4:05 in Fall and Spring, and at $p>0.05$ none of these differences between Fall and Spring were statistically significant. Mean course satisfaction was 6.5/7 and 6.3/7 for Fall and Spring, respectively. For both the standardized patient and simulator portions of the final exam in the Fall and Spring, nearly all structures were identified and the majority of participants correctly adjusted depth and adjusted gain for image optimization. Retention data will be reported at the time of presentation as the retention study will be concluding in December.

Conclusions: US is a useful clinical tool which is not taught routinely in undergraduate medical education due to limited time and resources. After a short MS-led curriculum, most 2nd year MS can identify all anatomy and meet all technical criteria for an optimized image. Additionally, many participants completed the FAST US exam in a timeframe consistent with expectations for PGY-1 residents. Therefore, peer-to-peer US instruction is an effective and efficient method of reinforcing anatomy and providing US education which MS can use during residency and beyond, all with minimal strain on faculty resources. Conclusions regarding retention will be reported at time of presentation. Limitations include: sample size, and consistently high satisfaction could be due to self-selection of highly motivated and interested students for this elective experience, and therefore this sample is not necessarily representative of the 2nd year MS class. Future directions include: development of simulator-specific US curriculum, and integration of peer-to-peer model and FAST US exam into the MCW Clinical Human Anatomy curriculum.

Rising M4's as Residents in Three Simulated Rounding Environments: Teaching Presentation Skills to Novice M3's.

Nicole Liberio, Lars Rikardsen, Meenakshy Aiyer, Gerald Wickham, University of Illinois College of Medicine at Peoria

Objective/Purpose: 1. To use simulated rounding environments to develop oral case presentation skills in novice M3's. 2. To involve M4 students in the preparation of their M3 colleagues for rounding case presentations in three different clinical environments.

Need for Innovation/Practice: Transition from pre-clinical years to clinical years is a source of anxiety for medical students. Lack of familiarity with the various clinical settings, deficiencies in oral presentation skills, and lack of awareness of their role in the healthcare team can contribute to this anxiety. Kakar et al (2013) found that M4 students are better evaluators than faculty and also provide peer support to alleviate stress. This finding contributed to our thinking to draw upon M4's as simulated "senior residents" in mentoring presentation skills and use simulation to orient the students to the clinical setting. Furthermore, a topic of discussion at the 2014 AAMC National Meeting among OSR representatives was the unclear expectations of M3 clerkships. Utilizing simulation to help M3 students develop presentation skills before their first clerkship would diminish the learning curve M3 students face as they begin working in the hospital.

Reference: Kakar, Seema P.; Catalanotti, Jillian S.; Flory, Andrea L. (2013). Evaluating Oral Case Presentations Using a Checklist: How Do Senior Student-Evaluators Compare With Faculty? *Academic Medicine*. 88(9):1363-1367.

Methods, Materials and Resources used: 1. Nine patient scenarios were created in three clinical settings: inpatient rounds, ambulatory setting, and family-centered rounds. 2. Case topics fell into three disciplines: Internal Medicine: chest pain, altered mental status, shortness of breath Pediatrics: asthma, neonatal jaundice, drug overdose Family Medicine: hypertension, headache, menopause 3. Standardized patients and M4's acting as residents were trained.

Outcomes : Students evaluated their experience based on five parameters: 1. Patient documentation prepared me to see the patient 2. The simulated patient portrayed the case accurately 3. The attending physician provided constructive feedback 4. The patient case was not too simplistic nor overly complex for my level of training 5. My M4 "Resident" provided appropriate guidance In all

categories, the mean response fell between 4.12 and 4.75 (out of 5), with the highest rating for M4's as senior residents. Students commented that this simulation helped to bring them from their classes to clerkships and they felt their presentation skills were greatly improved.

Strengths and Areas for Improvement: The strength of this program lies in the utilization of simulation and the collaboration between M4 & M3 students. M3 students benefit from the mentorship of M4 counterparts and M4 students gain experience applicable to clinical teaching. There are several areas for improvement. First, we aim to improve training M4 students in fulfilling the role of teacher. Second, we aim to expand to other disciplines: Psychiatry and Obstetrics-Gynecology. Third, we will incorporate an interprofessional team into the simulation reflecting current practice on inpatient floors. Feasibility of Program Maintenance/Transferability: The University of Illinois College of Medicine is a four-campus institution, and we hope to share this innovation with the other three campuses.

Effect of Doximity Residency Rankings on Residency Applicants' Program Choices

Debbie F. Cheng, Aimee M. Rolston, Sarah E. Hartley, University of Michigan Medical School; Sorabh Khandelwal, The Ohio State University; Jennifer G. Christner, Upstate Medical University; Rachel M. Caty, University of Michigan School of Public Health; Sally A. Santen, University of Michigan Medical School

Background: Choosing a residency program is a stressful and important decision for any medical student. Doximity recently released residency program rankings by specialty in September 2014 with some collaboration from U.S. News and World Report. The objective of this study was to investigate the impact of the Doximity residency program rankings on residency application choices made by fourth year medical students.

Methods: A 12-item survey was developed with attention to both content and response process validity by four education leaders (assistant deans and program directors) and two fourth year medical students. It was subsequently piloted and revised. The survey was administered via Qualtrics™ in October 2014 to all fourth year medical students at three schools applying to residency in any specialty through the Main Residency Match. The survey asked whether students applied to one of the 20 Doximity ranked specialties, their awareness of the rankings, how accurate they felt the rankings were, and whether these results impacted the residency programs to which they chose to apply.

Results: A total of 461 students responded to the survey (response rate of 75.8%), with 425 applying in one of the 20 ranked specialties by Doximity. Of the 425 students, 247 (58%) were aware of the rankings and 177 looked at the residency rankings. On a 1-100 scale with 100 being very accurate, students reported a mean ranking accuracy rating of 56.7 (SD 20.3). Forty-five percent of students who looked at the rankings modified the number of programs to which they applied, with the majority adding programs. The mean number of programs added and dropped was 4.3 and 2.9, respectively.

Conclusions: Over half of students applying to one of the Doximity ranked specialties were aware of the rankings. In general, many students thought the rankings were moderately accurate. Despite this, almost half of students who had looked at the rankings modified their application list of programs. Graduating medical students might benefit from more emphasis on objective characterization of programs that they can assess in light of their own interests, career goals and personal preferences.

Rounds in the Modern Era: A Qualitative Study of Internal Medicine and Pediatrics Resident Perceptions

Raphael Rabinowitz, Jeanne M. Farnan, The University of Chicago Pritzker School of Medicine; Oliver F. Hulland, Lisa Kearns, The Ohio State University; Michele Long, Bradley Monash, University of San Francisco; Priti Bhansali, Children's National Health System; Helen B. Fromme, The University of Chicago

Background: Attending rounds are one of the fundamental processes for patient care and clinical education at teaching hospitals. Previous observational studies have characterized the activities of modern rounds, however there is an absence of studies addressing house staff perceptions of rounds. To address this gap, we conducted a multiinstitutional study to determine the perceptions of pediatrics and internal medicine residents about the current and ideal purposes of inpatient rounds on hospitalist services.

Methods: In this multi-institutional qualitative study, the authors conducted focus groups with internal medicine and pediatrics residents at four national teaching hospitals. Grounded theory was used to identify domains and themes.

Results: Eighty-five residents participated. Eighty-two percent of pediatrics residents and nineteen percent of internal medicine residents reported conducting family-centered rounds (FCR). Residents contributed 288 comments related to the current purposes of rounds and 235 comments related to the ideal purposes of rounds. The authors categorized these responses into three main domains: patient care, clinical education, and patient/family involvement. All residents referenced patient care most frequently as a purpose of rounds. Within the domain of patient care, the theme of medical team communication, which included patient hand-off on rounds, decreased in frequency as an ideal purpose compared to a current one, as did the patient/family involvement domain. Clinical education was mentioned with increased frequency as an ideal purpose by both specialties, with subthemes related to the pediatrics milestone of patient care and the internal medicine milestone of medical knowledge accounting for most of the increase.

Conclusions: Internal medicine and pediatrics residents perceive three broad purposes of inpatient rounds: patient care, clinical education, and patient/family involvement. Though residents identified patient care as the main purpose of rounds, they indicated that clinical education should be more of a focus and that patient/family involvement and handoffs should decrease in focus, with issues with FCR and time pressures being implicated in these needs. Discrepancies between current and ideal themes within clinical education indicate that pediatrics residents desire greater instruction in patient care topics on FCR rounds. There is a need for further study of the ideal educational approach to FCR.

Saturday, April 11, 2015

CONCURRENT SESSIONS: Small Group Discussions 9:30 – 10:15 am

MESRE Oral Abstract Presentations Session: Students

Matchmakers or Money-suckers: Utilization and Effectiveness of Visiting Student Electives Across Specialties

Anderson, Mary, Rush Medical College

Background: Fourth year medical students commonly complete visiting student electives (VSEs) during the residency application process. These clerkships increase applicants' exposure to desired programs, and benefit programs by serving as extended interviews. As VSEs involve monetary and opportunity costs to students and administrators, data on their utility is vital for student wellbeing and ultimately, success in the Match. We hypothesized that the proportion of applicants completing VSEs would vary by specialty. To test this hypothesis, we performed a retrospective review of prospectively collected applicant demographics and Match data.

Methods: De-identified academic records of one institution's graduates from 2008-2014 were queried for GPA, USMLE exam scores, specialty choice, PGY2 match site, and site of completed VSEs. Analysis of VSE completion rate and match into host institutions excluded students who matched into their home institution. Data collected were analyzed using standard descriptive statistics with means and 95% confidence interval shown.

Results: Of 1124 records queried, 55.4% completed VSEs during the study period. Across all specialties, students who completed VSEs had significantly higher GPAs (2.70 ± 0.04 vs 2.56 ± 0.05 , $p < 0.01$), USMLE Step 1 (227.2 ± 1.2 vs 222.5 ± 1.7 , $p < 0.001$) and Step 2 (235.5 ± 1.3 vs 232.1 ± 1.9 , $p < 0.05$) scores than those who did not. A significantly higher proportion of applicants in Dermatology ($94.7 \pm 10\%$), Emergency Medicine ($91.9 \pm 5.8\%$), Neurosurgery ($100 \pm 0\%$), Orthopedics ($100 \pm 0\%$), and Otolaryngology completed VSEs compared to the all-specialty average. A significantly lower proportion of Family Medicine (40.9 ± 11.9) and Internal Medicine (37.7 ± 7.9) applicants completed VSEs ($57.6 \pm 3.7\%$). A significantly higher proportion of applicants in Dermatology ($94.7 \pm 10\%$), Emergency Medicine ($91.9 \pm 5.8\%$), Neurosurgery ($100 \pm 0\%$), Orthopedics ($100 \pm 0\%$), and

Otolaryngology completed VSEs compared to the all-specialty average. A significantly lower proportion of Family Medicine (40.9±11.9) and Internal Medicine (37.7±7.9) applicants completed VSEs (57.6±3.7%). A significantly higher proportion of applicants in Psychiatry (57.1±36.6%) who completed VSEs matched into a VSE host program, while a significantly lower proportion of Emergency Medicine (5.5±5%) applicants matched into a VSE host program, when compared to the all-specialty average (14.2±3.4%). Students who completed VSEs were significantly less likely to match at their home institution than those who did not (12.0% vs 21.6%, p01).

Conclusions: Our hypothesis was proven correct: residency applicants in different specialties utilized VSEs at significantly different rates. In addition, our findings point to allocative inefficiency: students commonly complete VSEs in specialties where they are minimally effective, such as Emergency Medicine, while they utilize VSEs at low or average rates in specialties where they may be more beneficial, such as Psychiatry. Further analysis is needed to determine the cause of differences in VSE utilization and effectiveness between specialties. We posit that strategic deployment of these findings to students during application counseling may improve Match success and decrease costs associated with VSEs.

Does Longitudinal Physician Faculty Exposure Influence Career Choice in Medical Students?

Giano, Leigh Ann, The Ohio State University College of Medicine

Background: Factors known to be influential in career choice for medical students include lifestyle, gender, mentors, student characteristics and specialty specific characteristics. It is unknown whether longitudinal exposure to faculty influences career choice. Most medical schools have a physician development course in the first two years of training and many schools also have a Learning Communities (LC) program. At our institution, students are exposed to attending faculty during small groups on a weekly basis in a physician development course called Clinical Assessment and Problem Solving (CAPS). Small groups are facilitated by either one or two faculty for the entire academic year. They are also exposed to a faculty member longitudinally across 4 years in Learning Communities. Both CAPS and LC group leaders are assigned randomly, without respect to students' career goals.

Hypothesis: The specialty of the longitudinal small group faculty instructor impacts future career choice.

Methods: We began with all students enrolled in Med 1 CAPS and LC in 2008-09, 2009-10, 2010-11 and matched the students with their attending facilitators (overall student sample size of 680). We compared the graduating classes of 2012, 2013, and 2014. After removing students who did not fit inclusion criteria, we had 517 cases for Med 1 and 517 cases for Med 2. Students were not included if their small group had co-facilitators from different specialties. We ran a chi square analysis for each facilitator specialty to determine if there was any significance between specialty the student matched in after graduation and faculty specialty. We also compared students and instructors based on person-oriented specialties versus technique-oriented specialties (Borges, et al Medical Teacher 2009).

Results: There was no significant association between the specialty of the CAPS instructor and career choice of students. Furthermore, there was no association between career choice of students and instructors in person-oriented versus technique-oriented specialties (see figure 1). We did see a positive correlation in the Learning Communities among students with a facilitator from Plastic Surgery. In the plastic surgery group, 7.7% (2/26) of students who had a Plastic Surgery LC leader went into this specialty v. 0.9% (4/448) of students whose LC leader was not a plastic surgeon.

Conclusions: Faculty specialty in longitudinal physician development courses does not influence career choice in medical students in most cases. One outlier to this pattern was seen in our institution with students going into plastic surgery.

Perspective taking in first year medical students: How does it relate to pro-social traits and values?

Ahmad, Nadia, Medical College of Wisconsin

Background: Perspective taking is a cognitive process that has been reported to facilitate interpersonal understanding, increase empathic concern for people in need, and improve social attitudes. Trait perspective taking refers to the stable tendency to perspective take over time, but levels can change in typically functioning adults if they are motivated or instructed to do so. The purpose of this study was to

explore the relationship between medical students' trait perspective taking scores, and their social and humanitarian attitudes.

Methods: 39 first semester medical students completed self-report personality and attitude scales as part of a larger study of medical student experiences during the 2014-2015 academic year. Perspective taking was assessed by the 7-item Interpersonal Reactivity Index subscale (Cronbach's $\alpha = .83$); agreeableness by the 10-item McCord's M5-50 subscale (Cronbach's $\alpha = .79$); and benevolence (Cronbach's $\alpha = .79$) and universalism (Cronbach's $\alpha = .81$) by respective 10-item Schwartz Value Inventory subscales. A sub-analysis focused on trust, a facet of agreeableness measured by two agreeableness items (Spearman-Brown coefficient $\alpha = .40$). All instruments used 5- or 8-point Likert-type response scales; coded so greater values indicated more agreement. SPSS Version 21 was used to calculate Spearman correlations (r_s) between perspective taking scores and agreeableness, trust, benevolence, and universalism.

Results: Medical students' perspective taking scores were positively correlated with agreeableness, $r_s = .73$, $p < .001$; trust, $r_s = .35$, $p < .001$; and benevolence, $r_s = .49$, $p = .002$. Perspective taking was not correlated with universalism, $r_s = .19$, $p = .26$. Within the domain of benevolent values, perspective taking was correlated with behavior-based values (being loyal, honest, helpful, responsible, and forgiving, $r_s = .33$ to $.56$), but not with abstract values (spiritual life, meaning in life, mature love, true friendship, $r_s = .12$ to $.29$). Within the domain of universal values, perspective taking was correlated with self-directed values (inner harmony, wisdom, and being broadminded, $r_s = .31$ to $.38$), but not externally-focused values (equality, a world at peace, unity with nature, world of beauty, social justice, and protecting the environment, $r_s = -.21$ to $.27$).

Conclusions: Although perspective taking was not correlated with abstract humanitarian values such as social justice, it was correlated with traits and values that promote social functioning: agreeableness, trust, and valuing understanding and prosocial rules of behavior. These data suggest that perspective taking is a factor that could contribute to students' medical professionalism.

Medical Students' Willingness to Say "I Don't Know"

Bree, Kevin, Wright State University Boonshoft School of Medicine

Background: Literature suggests that professional values of medical students weaken over time through a process known as "moral erosion." An immense workload may cause medical students to lose their humility—which for purposes of the current study is the willingness to admit one does not know. Lack of humility could lead to misdiagnoses, improper or unethical communication, and contribute to medical error. Moreover, using "I don't know" (IDK) in medical education could lead to increased discussion in the classroom and a more humble physician. This study examines if first-year medical students are more likely to choose IDK than an incorrect answer. We hypothesized that when given the option of IDK, first-year medical students will be more likely to choose IDK than an incorrect answer since they have not yet been subjected to moral erosion.

Methods: With institutional review board approval, 100 first-year medical students (100% response rate) at one US medical school were given two versions (A and B) of a Team Based Learning (TBL) Individual Readiness Assurance Test (IRAT) back to back with no time for discussion in between during a required microbiology course. Both IRATs consisted of ten questions and were identical except for an additional option of IDK for each question on IRAT B. One point was given for a correct answer, zero points for an incorrect answer, and one-half a point for selecting IDK. The higher of a student's two scores counted toward their official grade.

Results: On IRAT B there were a total of 160 wrong answers and 203 IDKs demonstrating that first-year medical students chose IDK 1.27 (203/160) times more than they chose an incorrect answer. Students who performed better on IRAT B than IRAT A did so by choosing fewer wrong answers, not by choosing more right answers. However, students that did worse on IRAT B did so by choosing fewer right and wrong answers and selecting IDK more often. This implies that the lower IRAT B score is due to students changing more right than wrong answers to IDK.

Conclusions: Medical students are taught how to manage countless diseases during their education, yet lack training on maintaining humility. With the increasing frequency of TBL and IRATs in

medical education, further investigation of including IDK as an option is recommended. Future studies could explore if this option leads to fewer misdiagnoses, more proper and ethical communication, and a reduction in medical error.

Demoralizing Factors for Medical students in the Core Clerkship Year

Slavin, Stuart, Saint Louis University School of Medicine

Background: Distress in medical students during the clinical years has been documented in numerous studies. Great attention has been paid to mistreatment of students by faculty, residents, and nurses. Medical schools across the US are making significant efforts to combat this problem. Little work has been done however, exploring other factors that may contribute to medical student distress in the clinical years. The aim of this study was to evaluate the perceived impact of various potentially demoralizing factors on third-year students.

Methods: A total of 495 students from three consecutive classes were surveyed at the end of their third year at Saint Louis University School of Medicine. Students rated the degree to which 25 factors were demoralizing to them during the clerkship year using a five-point Likert scale from 0=Not at all to 4=Extremely.

Results: 386 of the 495 students participated (78% response rate). The highest rated sources of demoralization were related to working with unhappy residents (2.7) and faculty (2.3), feeling ignored by residents (2.2), not feeling part of the team (2.2), feeling incompetent (2.2) and receiving unfair evaluations from faculty (2.1) and residents (2.0). Nonverbal mistreatment by residents (1.6) and faculty (1.5) as well as verbal mistreatment, discrimination, and sexual harassment (all below 1.5) were rated as less important factors.

Conclusions: This study suggests that factors other than mistreatment may be important in causing demoralization of medical students during their clerkship year. Efforts to improve the educational experience for medical students may need to focus more broadly on resident and faculty unhappiness rather than solely on the reduction of mistreatment.

RESOURCE EXCHANGE:

Children with Disabilities and Medical Student Engagement Program

Hira Rashid (MS2) and Jennifer Mendez, Ph.D. Wayne State University School of Medicine

Objectives: After completing this session, participants will be able to:

1. Demonstrate appropriate skills for communicating with children who have developmental disabilities and their families.
2. Utilize the Beech Quality of Life Assessment tool to illustrate the stress a family might experience while caring for a child with a disability.
3. Enhance the family quality of life by sharing information pertaining to the disability and resources for support services.

Rationale: This program was offered to students in the co-curricular program and addresses the Liaison Committee on Medical Education (LCME) Institutional Standard 14-A which states that medical students should be provided opportunities to participate in service-learning activities that meet the needs of the community and offer professional development and reflection for students. Training future physicians to meet the needs of patients with disabilities is essential, especially in cities like Detroit. According to the Michigan League for Human Service's (MLHS), there were 2500 homeless children in 2011, with estimates of disability among these children ranging from 40-60%. Over the years, the traditional curriculum at WSU-SOM has been modified in order to provide some exposure to individuals with disabilities, but opportunities for one-on-one interaction with children with developmental disabilities and their family members are very limited. The newly developed Children with Disabilities and Medical Student Engagement Program aims to provide students with an opportunity further enhance their communication skills and knowledge about working with children who are living with disabilities.

Implementation of a Staff-Driven Exam Quality Improvement Process

Zaidi, Nikki, University of Michigan Medical School

Objectives: The goal of this session is to provide participants with a basic overview of the development process for creating a program of exam quality improvement that is staff-driven yet rooted in a collaborative, faculty-staff approach. This session will introduce participants to some basic guidelines for writing good multiple choice questions, provide examples for using these guidelines to establish metrics for evaluating test items, and discuss strategies for distributing and applying such quality improvement information in a manner that minimizes conflict and fosters ongoing collaboration.

Rationale: The Medical School Evaluation & Assessment Office collaborated with curriculum leadership and faculty to institute an exam quality improvement process. As we know, assessment drives learning; therefore, we are critically evaluating our assessments to help ensure that they best support student learning. While faculty are content experts, evaluation and assessment staff often have significant expertise in item and assessment quality, as well as time allocated specifically for examination administration. In turn, our staff-driven exam quality improvement process is intended to provide content-expert faculty, who author our examination items, with key exam quality metrics produced by staff. These metrics, in turn, guide ongoing evaluation and improvement of our multiple-choice exam items. Using a combination of theory and established guidelines for writing good test items, all exam items are reviewed and classified by professional staff, according to these key metrics. This process was initiated to critically review technical item flaws and issues related to item content, and to provide item-level analyses that highlights statistical and content related quality issues. Reviewer calibration exercises and multiple-review processes were implemented to improve interrater reliability and quality of item analyses. Additionally, compelled by evidence in the literature that supports the use of multiple-choice assessment items that probe all levels of learning, a modified, two-level Bloom's Taxonomy was created. Item analyses based on this taxonomy assists faculty in creating question items that measure students' critical-thinking as well as knowledge acquisition. The rationale for providing these metrics is to evaluate our exam items and engage in continual quality improvement.

Interview Preparation for the Residency Match: A Resource Exchange to Aid Program Development

Tissot, Abbigail, University of Cincinnati College of Medicine

Objectives: 1. Establish the necessary elements of an interview-preparation program aiming to prepare medical students to successfully interview with residency programs.
2. Provide an overview of a new (optional) "Mock Interview" program implemented by the University of Cincinnati College of Medicine for medical students entering the residency match.
3. Outline interview preparation materials used by other programs for the purposes of preparing students to interview with residency programs. 4. Identify additional recommendations/resources for promoting student performance on residency interviews.

Rationale: Medical students have had little experience with formal interviewing and are, therefore, not well prepared to navigate the interview process as they proceed through their residency interviews. Other fields (e.g., pharmacy) have evaluated student characteristics that predict success in residency interviews, but there is little information in the literature regarding medical student performance on unstructured, 1:1 interviews for residency. Given the paucity of extant literature concerning medical students and residency interviews, a meta-analysis of medical school programs is unavailable. This session is meant to aggregate information from a variety of programs concerning programming that prepares medical students for their residency interviews (i.e., an informal "meta-analytic" discussion of sorts). The goals of this session will be to outline necessary elements of residency interview preparation using existing literature (from medical and other health professions), review a newly implemented (optional) mock interview program utilized by the University of Cincinnati College of Medicine, review and consolidate the approaches used by other programs, and facilitate discussion surrounding recommended elements that have not yet been implemented. Through this process, attendees will receive feedback about their current interview preparation programming, access materials from up to 20 other programs, and leave with identified areas for program enhancement.

Concurrent Sessions 2:30-4:00

MESRE Oral Abstract Presentations Session: Students

Elephant in the Room? General Medicine Faculty Perceptions of the Impact of Electronic Medical Record (EMR) on Patient-Doctor Communication

Lee, Wei Wei, University of Chicago

Background: Studies demonstrate that EMR use in exam rooms can prevent providers from focusing on patients. Despite widespread adoption of EMR in academic institutions in ambulatory settings, little is known about how general medicine faculty providers perceive EMR adoption and their ability to integrate the EMR in a patient-centered manner. While there are known EMR-related skills that enhance the clinical interaction, few providers receive formal training. We aim to survey General Internal Medicine (GIM) faculty at the University of Chicago on their perceptions of EMR use and the impact on patient-doctor communication.

Methods: After reviewing the literature, we developed a 34 item survey with five-point Likert-scale responses on knowledge, attitude and skills pertaining to EMR-related communication in the outpatient setting. One year after the University of Chicago implemented the EPIC ©EMR system in the outpatient clinic, we surveyed GIM faculty members at a monthly section meeting. The following is a sample question from the survey: How much do you agree with the statement 'I focus too much on the EMR and not enough on what the patient is saying.' Likert responses at the high end of the scale were grouped to dichotomize data (i.e. agree/strongly agree) and descriptive statistics were summarized.

Results: Thirty one (31/32, 97%) GIM faculty surveys were analyzed. The majority [58% (18/31)] of respondents were female and the mean age was 47 (range 33-59). Fewer than a third [28% (9/31)] rated their knowledge of 'Patient-Centered EMR Use' as good or excellent, with just over a third [35% (10/31)] reporting their skill level as proficient or expert. Despite this, nearly two thirds of respondents (64%, 20/31) reported they often or always integrated EMR-use with patients in the clinic room. However, respondents also reported agreeing with many statements about the pitfalls of EMR in the room. For example, 42% (13/31) agreed that 'EMR use negatively impacts my ability to communicate with patients' and just over a third [35% (11/31)] reported that 'the EMR negatively impacts the patient-doctor relationship.' Unfortunately, 42% (13/31) agreed that they 'focus too much on the EMR and not enough on what the patient is saying,' with the majority [68% (21/31)] reporting agreement with 'I do not maintain adequate eye contact with the patient while using the EMR.' Forty two percent (13/31) agreed that 'using the EMR during the clinic visit is stressful' and only half [52% (9/31)] were 'confident in their ability to use the EMR in a patient-centered manner.' Roughly one third [28% (9/31)] of respondents agreed that 'prior to the EMR, I provided better patient-centered care.' While 45% (14/31) reported the 'training on patient-centered EMR use' was very or extremely important to their clinical practice', only 1 person (3%) rated their training as good or excellent. The majority of respondents (71%, 22/31) agreed that 'training on patient-centered EMR use should be required for all attendings.'

Conclusions: Faculty members in an academic general medicine practice report that EMR use can negatively impact patient-doctor communication in the outpatient setting, and that they struggle with eye contact and using the EMR in a patient-centered manner. Despite available best practices on EMR-related communication skills, few faculty members receive formal training. Faculty development courses should be implemented to address this gap in continuing medical education.

Predictors of full-time faculty appointment among MD-PhD program graduates: A national cohort study

Andriole, Dorothy Washington University School of Medicine

Background: Identification of variables associated with full-time faculty appointment among MD-PhD program graduates can inform the efforts of medical schools across the U.S. to recruit a diverse and highly qualified academic medicine physician-scientist workforce. However, factors associated with recent MD-PhD program graduates' pursuit of academic medicine careers have not been examined. A literature

review identified medical school Medical Scientist Training Program (MSTP) funding, specialty choice, participation in substantive research experiences during graduate medical education (GME) and total debt as potential predictors of academic medicine faculty appointment among MD PhD program graduates. We therefore examined the extent to which these variables independently predicted fulltime academic medicine faculty appointment among a national cohort of MD-PhD program graduates.

Methods: The Association of American Medical Colleges provided de-identified, individualized records for all 1993- 2000 U.S. medical school matriculants, 3,420 of whom graduated with dual MD-PhD degrees by February 27, 2014. Using multivariable logistic regression, variables of interest were examined in association with AAMC Faculty Roster records of full-time faculty appointments.

Results: Of 3,420 MD-PhD graduates, we analyzed data for 2,830 (82.7%) who had graduated prior to 2008 and were no longer in GME at follow-up. Forty-five percent (1,227/2,830) had full-time faculty appointments. Graduates who reported total debt of \geq \$100,000 at graduation (compared with no debt; odds ratio [OR]: 0.51, 95% confidence interval [CI]: 0.36–0.72) were less likely to have a full-time faculty appointment. Graduates who participated in \geq one year of research during residency compared with no documented research (OR: 1.48, 95% CI: 1.24–1.76), who picked specialties of neurology (OR: 1.56, 95% CI: 1.02–2.39) and pediatrics (OR: 1.60, 95% CI: 1.10–2.32), each compared internal medicine, and who attended schools with long-standing (OR: 1.38, 95% CI: 1.16–1.65) and recent (OR: 1.43, 95% CI: 1.01–2.03) MSTP funding, each compared with non-MSTP-funded schools, were more likely to have a fulltime faculty appointment.

Conclusions: High debt negatively predicted, and each of institutional MSTP funding, specialty choice of neurology or pediatrics, and participation in \geq one year of research during residency positively predicted, full-time faculty appointment. Our findings highlight the roles of financial support for MD-PhD program enrollees and loan-repayment programs for MD-PhD program graduates, and of substantive research opportunities during GME, as among the means to promote recent MD-PhD program graduates' academic medicine career choice.

A Faculty Development Program for Pre-Clinical Small Group Facilitators

Thompson, Laura, The Ohio State University College of Medicine

Background: Effective facilitation of small groups of medical students in the pre-clinical years can be challenging. At the Ohio State University, we utilize physician educators from a variety of fields, and provide weekly teaching notes, resources, standardized patient cases, and student instructions for use in our Longitudinal Groups course, which introduces basic clinical skills. The program strives for consistency in teaching, while allowing for the practical mentorship. In order to improve consistency in the experience for students and improve the quality of facilitating, we describe and evaluate a faculty development program for small group facilitators.

Methods: We conducted an in-person and online needs assessment of our small group facilitators regarding faculty development topics. From this survey, topics were prioritized for faculty development by the Longitudinal Group leadership. Topics included: leading diverse small groups, integration of iPads, modeling evidence-based medicine, teaching medical documentation in the electronic health record, defining clinical reasoning, bringing biostatistics to the bedside, small group dynamics, and small group closure. Each session was 1 hour long. A standard CME evaluation form was used to evaluate each session. This form provides a 7 point scale for evaluation (1=strongly disagree, 4=neutral, 7=strongly agree).

Results: A total of 23 faculty development sessions were taught and the average number of facilitators that attended each was 8.43. The total number of contact hours was 194. Overall, the sessions were rated as meeting the needs of the facilitators (6.27 / 7). Facilitators thought that most sessions would change the way they interact with students (6.13 / 7). The sessions that were highest-rated for satisfaction were: Bringing Biostats to the Bedside, Integration of iPads into Small Group Curriculum, and Small Group Closure (average rating 9.8 / 10). Facilitators were the most confident that sessions titled Integration of iPads into Small Group Curriculum and Teaching Medical Record Documentation in the EHR could be put into practice.

Conclusions: We implemented a successful faculty development program for small group facilitators in the pre-clinical years of medical school. The program was well received, and the topics were facilitator-driven. The highest rated topics included Bringing Biostats to the Bedside, Integration of iPads into Small Group Curriculum, and Small Group Closure, based on participant evaluations. Using the needs assessment, further faculty development topics were selected and are being implemented. Deficiencies in this study included inability to assess actual changes in teaching as a result of the faculty development series.

Medical School Faculty Attitudes towards E-Learning

Lee, Beth, The Ohio State University College of Medicine

Background: E-learning delivers learning materials to students through web-based technology. Many medical schools have adopted e-learning to enhance text books, to prepare students for classroom enrichment activities, or to improve teaching and learning quality. Last year, the OSU College of Medicine launched a new curriculum designed to replace many face-to-face lectures with e-learning modules, freeing students for more clinical time. This change required faculty to convert lectures to eLearning. A standard software platform called Articulate was adopted, which faculty were required to learn. The purpose of this study was to evaluate the e-learning rollout from the faculty perspective. We were also interested in assessing whether faculty opinions about e-learning were related to their involvement and experience with teaching, prior experience with distance learning, and general response to large-scale organizational change.

Methods: A questionnaire was designed through literature review and committee consensus. Our target population was medical school faculty who had taught in our new curriculum (n=251). The questionnaire was administered electronically using Survey Monkey. Data analyses included descriptive and inferential statistics

Results: The survey return rate was 30.7% (77 of 251). Faculty had an average of 16.5 years of teaching experience, and dedicated an average of 28% of their time to teaching. Most faculty find teaching rewarding (91%) and a source of career satisfaction (95%). Only 27% said education was a primary career focus. Almost all respondents (95%) indicate an openness to organizational change, and 81% believe that academic institutions must change to survive. Faculty recognized the flexibility of e-learning (82%), and the integration of multiple forms of media (52%). However they had concerns that e-learning reduces student-teacher communication (59.8%) and reduces their teaching effectiveness (48.1%). Most (71%) respondents had experience with distance learning and 67.5% had previously developed e-learning modules. About half (51.9%) had developed e-learning modules for the new curriculum using the Articulate software. Primary criticism of the change to e-learning had to do with time investment (50%) and the lack of face time with the students (61.5%). They seemed more concerned however about the lack of faculty input into the changes to on-line learning and the adoption of software to facilitate the move (60%).

Conclusions: "Faculty are not recalcitrant luddites." While critical of the manner in which change was adopted, they seem generally accepting of e-learning, but still grapple with the time commitment to learn the software and develop modules.

Relationship-Centered Communication Skills and the Electronic Health Record: A Faculty Needs Assessment on the Need for Medical Student Education

London, Daniel, Cleveland Clinic Lerner College of Medicine of Case Western Reserve University

Background: The electronic health record (EHR) can improve the quality, safety, and efficiency of care. Concerns remain regarding its impact on the patient-physician relationship. We previously reported on the successful introduction of relationship-centered communication skills while using the EHR into an already established curriculum composed of small group skills practice using standardized patients followed by real-world experience in outpatient clinics. Student feedback revealed that implementation varied by preceptor. We conducted a needs assessment to determine preceptor perceptions of how the EHR impacts patient-physician communication and the potential utility of educational sessions, to assist in future iterations of the sessions.

Methods: Electronic surveys were sent to all communication skills and longitudinal clinic preceptors. The survey was divided into 2 sections: the effect of the EHR on core communication skills and the perceived educational need. Descriptive statistics were performed.

Results: 55 out of 85 preceptors, comprised of 28 longitudinal clinic preceptors and 27 communication skills preceptors, completed the survey. All respondents (100%) thought it was important for students to be taught how to utilize the EHR as a resource for educating patients and how to properly communicate with patients while utilizing the EHR. Over 90% of surveyed faculty thought that using the EHR during a patient encounter positively affected patient education, the review of systems, and health maintenance tasks. A majority of faculty believed the EHR negatively impacted non-verbal communication (93%), rapport-building (67%), and empathy (58%). Additionally, 96% of faculty thought this topic required formal teaching either during the second (67%) or third (60%) years with the ideal setting being an interactive workshop (95%) and practical exposure with standardized patients and in outpatient clinics (75%). Only 22% of faculty reported receiving education on how to communicate with patients using the EHR themselves, and while 75% reported discussing the topic with medical students, the content they covered varied dramatically seemingly based on their own experiences.

Conclusions: Consistent with our previous findings, faculty perceptions mirror students' on how the EHR impacts patient encounters, and on the need for and best methods of educating students on this topic. The striking finding was the little formal training our faculty has, which suggests the need for randomized control trails to identify empirically validated skills to then be integrated into a standardized curriculum. Overall, the needs assessment supports having a formal curriculum on this topic, and we plan to provide faculty development to better ensure consistent instruction for our students.

Sunday April 12, 2015

Concurrent Sessions 9:30-11:00

MESRE Oral Abstract Presentations Session

The Intersection of Gender, Clinical Evaluations, and Formal Assessments: Averting Gender Bias during a Third Year Obstetrics and Gynecology Clerkship

Kaljo, Kristina, Jacques, Laura, Farez, Rahmouna, Treat, Robert, Davis, Joseph, Lund, Michael, Medical College of Wisconsin

Background: After decades of gender disparities, medical education has shifted to a more equal composition of female and male students. Yet, the question remains whether this shift in gender demographics translates to equitable opportunities between female and male medical students. Recent scholarship on obstetrics/gynecology clerkships presents inconsistencies across areas of standardized exams and clinical evaluations, specifically due to gender. This draws attention to numerous concerns, specifically the long term impact gender bias has on the success of female medical students in future leadership roles. The purpose of this study was to examine available student data to determine whether gender bias exists in end-of-M3 evaluations for students in an OB/GYN clerkship.

Methods: Ten years (2004-2014) of obstetrics/gynecology end-of-M-3 clerkship student performance evaluation (SPE) scores and NBME obstetrics/gynecology subject examination (OSE) scores were analyzed. The SPE was divided into ten competency domains: history/physical examination/medical problem solving-assessment/medical problem solving decision making/oral presentation/written documentation/patient care/technical skills/professional behavior. An overall average of all ten SPE domains was calculated. Data was analyzed with two-way analysis of variance (ANOVA) using gender and OSE terciles as predictors. Cohen's d calculated for effect size. Pearson correlations were used to establish relational strength between SPE domains and NBME scores. Inter-item reliability determined with Cronbach alpha. Analyses generated with IBM® SPSS® 21.0.

Results: ANOVA reported statistically significant ($p \leq .050$) differences in SPE mean scores for: (a) gender (higher for females in eight of ten domains and overall average) and (b) OSE tercile (higher for

upper 33% tercile of female students in all ten domains and overall average). The effect size of overall SPE average when split by (a) gender was Cohen's $d=0.2$ and, (b) OSE tercile, $d=0.6$. Significant interaction effects between gender and tercile reported for four domains and the overall average effect size was $d=0.6$. The correlation between SPE and OSE was $r=0.3$, $p=.001$. The reliability of SPE scores was $\alpha=0.97$.

Conclusions: As medical schools continue to attract and enroll an increasing number of female medical students, we must assure that gender disparities are eliminated. Through the use of statistical analysis of student outcomes in OB/GYN, evidence sheds light on differences that continue to exist in undergraduate medical education. It is important to engage in ongoing discourse and critical action against both implicit and explicit incidents of gender bias across the continuum of medical education and into the selection and promotion of faculty and other leadership roles. These active steps assure that equitable opportunities are accessible to all.

Implicit White Preference in Medical School Admissions

Capers, Quinn, The Ohio State University

Background: African Americans remain underrepresented in medical school student bodies and on medical school faculties and committees, including admissions committees. "White preference" on implicit association testing (IAT) is an unconscious association of an image of a white individual with positive feelings and the image of a black individual with negative feelings. Unconscious "white preference" among admissions committee members could impact admissions decisions and disadvantage black candidates. To determine the presence and extent of "white preference" on our medical school admissions committee, we had our committee take the IAT and followed up with a survey to determine their impression of the test and its findings.

Methods: In the spring of 2012, all 130 (80 faculty, 50 medical students) members of The Ohio State University College of Medicine admissions committee took the IAT and the aggregate results were collected on a temporary website. Individual results were only known to the individual test takers, but the aggregate results and results for prespecified groups of faculty, medical students, men, and women were reported to the committee at the annual admissions retreat. In the fall of 2012 the annual admissions committee survey taken by all members added several questions related to the IAT exercise and based on a Likert Scale. For example, survey respondents were asked if they "strongly agree", "agree" "feel neutral about", "disagree", or "strongly disagree" with these statements: "When I interview candidates, I have my individual IAT results in mind"; and "Taking the IAT is likely to reduce bias in the admissions process in future admissions cycles."

Results: Results were tabulated for the entire group, for all women on the committee (whether medical student or faculty member), all men on the committee, and tabulated by medical student vs faculty status. Ten percent of male and female admissions committee members self-reported explicit "white preference" in the preamble questions to the IAT. On IAT testing, 52% of women and 64% of men displayed "white preference" that is, by definition, outside of conscious control. For medical student members of the committee, 10% self-reported having explicit white preference while 52% displayed white preference on IAT. When considering all faculty members, only 5% self-reported explicit white preference, yet 69% tested positive for white preference on IAT. On the survey several months into the subsequent admissions cycle, 45% of admissions committee members indicated that they "strongly agree" or "agree" with the statement "When I interview candidates, I have my individual IAT results in mind." The medical school class selected in the cycle immediately following the IAT exercise was the most diverse in the history of The Ohio State University College of Medicine.

Conclusions: Our medical school admissions committee members markedly underestimate their unconscious levels of "white preference", as up to 69% display this characteristic on implicit association testing. Taking the IAT was an important exercise in self-awareness for our medical school admissions committee. Forty to forty-five percent of committee members report being aware of their individual IAT results when interviewing medical school candidates in the subsequent cycle. Diversity metrics rose in the subsequent matriculant class. Taking the IAT is an important exercise in self-awareness for a medical school admissions committee that can potentially impact admission committee decisions.

Medical Student Perceptions of Cost-Conscious Care in an Internal Medicine Clerkship: A Thematic Analysis

Tartaglia, Kimberly, The Ohio State University Medical Center

Background: Although physicians direct as much as 87% of all health care spending, studies demonstrate that physicians lack knowledge about the costs of medical care. Similarly, learners have not traditionally received instruction on cost conscious care.

Methods: During the inpatient internal medicine clerkship at our institution, students complete a reflective exercise wherein they are asked to describe a scenario in which a patient experienced lack of attention to cost-conscious care. Herein, they are asked to identify solutions and barriers. We analyzed these reflections to learn more about students' awareness and perceptions regarding the practice of cost conscious care in our medical center.

Results: Eighty (80) students submitted the assignment between July-December 2012. The most common problems identified included unnecessary tests and treatments (n=69) and duplicative tests and treatments (n=20.) With regards to solutions, students described 82 scenarios with 125 potential solutions identified. Students most commonly used discussion with the team (speak up, ask why) as the tactic they would use (n=28) and most often wanted to focus lab testing (n=38) as the end result. The most common themes that emerged as barriers to high value care include increased time and effort (n=19), engrained practices (n=17), and defensive medicine or fear of missing something (n=18.) The majority (91.25%) stated their attending physicians addressed cost versus benefit with them during the clerkship.

Conclusions: Even with minimal clinical experience, medical students intuitively and accurately identify causes of low value care as well as potential solutions. Although students identify the hierarchy in healthcare teams as a potential barrier to improving high value care, most students stated they would feel comfortable bringing up the topic on their teams. Future efforts to improve the value of healthcare should empower learners at all levels to develop and implement solutions that will add value to patient care and streamline healthcare delivery.

The Influence of Gender on the Evaluation of High-Risk Behaviors in an Adolescent Patient: An Examination of Medical Student OSCE Performance

Craker, Nicole, Wright State University Boonshoft School of Medicine

Background: The number of adolescents participating in high-risk behaviors remains high. Physicians play a key role in identifying and addressing these behaviors with their adolescent patients in order to best reduce morbidity and mortality in this age group. The purpose of this research was to investigate the influence patient and provider gender might have on the assessment of high-risk behaviors of adolescent patients by examining medical student performance during standardized adolescent patient encounters.

Methods: Medical student performance on an adolescent Objective Structured Clinical Exam (OSCE) conducted at one US medical school from 2009-2013 was used to assess the impact of gender on performance. With institutional review board approval, scores from the written exam were retrospectively reviewed. Two questions (out of 11 total) on the written exam assessed whether medical students had engaged in conversation about high-risk behaviors (sexual encounters and alcohol consumption) with their adolescent patient. A t-test comparing mean scores between males and females and an ANOVA subgroup analysis of mean performance for four student-patient gender pair groups were conducted.

Results: A total of 396 medical students (196 female) completed the required adolescent OSCE written exam (response rate = 100%). Male and female students performed significantly different ($p < .05$, Bonferroni correction $p < .005$) on the question examining adolescent sexual behaviors with females (mean=0.424; sd=.36) performing better than males (mean = 0.298; sd = .32) ($p < 0.001$). When gender of the simulated patient was accounted for in the subgroup analysis, significant differences existed ($p < .05$, Bonferroni correction $p < .013$) between the four groups with females students paired with female patients scoring the highest (mean = 0.461, sd = .37) and male students paired with male patients scoring the lowest (mean = 0.272, sd = .33) ($p < 0.001$). No significant differences existed in mean scores between male and female students or student-patient gender pair groups for the question assessing alcohol consumption or other non-high risk behavior questions.

Conclusions: Gender impacts the screening practices of medical students regarding adolescent sexual behavior on an OSCE. Results suggest the need for more research evaluating the role of gender in screening adolescents for high-risk behaviors in physician practices to ensure that female and male adolescent patients are adequately screened. Furthermore, research is needed exploring the impact of gender on medical student OSCE performance as this may highlight the need for further medical education to increase comfort of students when interviewing patients regardless of their gender.

Appendix A

(Posters may be hung beginning at 9:00 AM on Friday morning and must be up by 1:00 PM on Friday. Posters must be taken down at the end of the poster session Friday evening.)

Medical Education Scholarship, Research, & Evaluation Posters

1. Patients Attitudes toward Medical Student Participation across Specialties: A Systematic Review

John Vaughn, The Ohio State University

Background: Medical students commonly participate in patient care in a variety of different settings. However, a systematic review of patients' attitudes toward medical student participation across specialties has not been performed.

Methods: The authors searched seven databases (CINAHL, Cochrane Library, ERIC, MEDLINE, PsycInfo, Scopus, and Web of Science) between January 1, 1999 and August 5, 2014. Two authors independently screened the results and selected articles that were written in English, were published in a peer-reviewed journal, and used a structured or semi-structured survey or interview to determine patients' attitudes toward medical student participation in their care. Study quality was assessed using the Medical Education Research Study Quality Instrument.

Results: Fifty-nine studies were included. Average study quality was low. Sixty-one unique evaluation instruments were used and 34 instruments (56%) lacked validity data. Patient satisfaction was not significantly affected by medical student participation. However, patients' acceptance of medical student participation varied widely between studies and depended on the type of participation. The most common reason for acceptance was a desire to contribute to the education of others, and the most common reason for refusal were concerns about privacy. Minorities were more likely to refuse medical student participation. Patients preferred to be informed before medical students participated in their care.

Conclusions: Patient satisfaction is not significantly affected by medical student participation. However, patient satisfaction may be a poor surrogate marker of patients' acceptance of medical students. Future research should employ validated evaluation instruments to further explore patients' attitudes toward medical student participation.

2. Cadavers as Educators: Utilizing an Interactive Website in Teaching Health Behaviors and Preventable Disease to High School Students Employing Body Donors

Samuel Stevens, Medical College of Wisconsin

Background: Recently, we developed the Cadavers as Educators program with the aim of teaching health behaviors and preventable disease to high school students (HSS) employing medical school body donors, thus maximizing the educational potential of these donors. After a successful launch of the program involving one high school during the '12-'13 school year, the program has consistently grown, with five high schools interested in participating during the '14-'15 school year. With this growth, we identified the need for improved communication with high schools before, during, and after their visits as well as a need for improved data collection and dissemination. Through past essays, 84% of participants identified that they shared what they learned with friends and family. We developed an interactive website (www.cadavereducators.org) with the goals of (1) improving short-term data collection from pre- and posttests with potential for future long-term data collection, (2) improving recruitment of interested high schools and medical student volunteers, (3) providing a resource for HSS to raise community awareness of health behaviors and the program, and (4) providing a resource for dissemination of program information to other medical schools.

Methods: www.cadavereducators.org is an interactive website with mobile browser compatibility developed in partnership with Northern Computer Service, Inc. Pages included under the "High School Students" tab that aid in improved data collection include "Pre Test" and "Post Test", allowing the HSS to log in to take graded quizzes during the visit, as well as "Essay DropBox" for the HSS to provide an optional written reflection on their visit. This tab also includes the "Student Information" page to collect

contact information, used for future long-term follow-up inquiries. Pages that aid in the recruitment of interested high schools are the homepage and “Contact Us” pages, allowing interested teachers to provide contact information and a message that is sent to a centralized email. The “Medical Student Sign-Up” and “Training Session” pages under the “Staff” tab aids in the recruitment and training of medical student volunteers. The website provides a resource for HSS to raise community awareness of health behaviors and the program through the homepage, “Introduction to Anatomy Lab”, and “Body Donor Program” pages, the latter of which links to the Medical College of Wisconsin’s Anatomical Gift Registry website. The final goal of providing a resource for dissemination of program information by participants is accomplished through the inclusion of the curriculum used on the “Curriculum Summary” page.

Results: The website was activated October 2014 and was utilized for data collection during the two November visit days. Pre- and post- test data and contact information was successfully collected from HSS (n=72) with additional chaperone feedback provided through electronic surveys (n=8). Sessions planned for February 2015 anticipate an additional 130 HSS to be involved. Full results of these data to be reported before the conference in April. Recruitment of medical student volunteers, including contact information and availability, was successfully collected through the website (n=35).

Conclusions: The interactive website has had a positive impact on the implementation and growth of the program, expanding the scope from 63 students from two schools in '13-'14 to ~200 students from 5 schools in '14-'15. Collection and analyzation of data has been simplified greatly by the website. Expanding to a greater size has made us realize that it is no longer the amount of data being collected that is the limiting factor to the number of HSS that we can accommodate, but the availability and willingness of the medical students that volunteer. Data has shown the program positively influenced participant knowledge about health behaviors and preventable disease based on pre and post- test data, with full results to be reported by April.

3. Relationship of Medical Student Personality and Empathy for Baseline Outcomes of a New Three-Year Medical School Curriculum

Robert Treat, Medical College of Wisconsin

Background: With the development of a new 3-year medical student program at two community campuses, we have developed a self-assessment activity to measure specific student characteristics that will help to identify student success in a 3- vs. 4-year program. Empathy is an important aspect of the physician-patient relationship, and has been previously found to correlate with personality traits. Variation in personality traits of medical students between different medicine schools has been reported but personality variations at one school using two different timelines (3- vs. 4-year) has not. Aspects of personality such as extraversion may emerge more predominantly in the different timelines and that the relational strength with empathy will change concurrently. This information can help admissions personnel guide medical school applicants into the best-fitting timeline. The purpose of this study is to analyze the relationships between item- and domain-level measurements of medical student personality and empathy, and establish a baseline for comparison to the new 3-year campus.

Methods: In Fall 2014, 45 M-1 medical students voluntarily completed these self-assessment surveys: (1) 50-item Five-Factor NEO-Personality Inventory (scale:1=very inaccurate;5=very accurate) and (2) 21-item Interpersonal Reactivity Index for dispositional empathy (scale:1=does not describe me well;5=describes me well). Pearson/Spearman correlations and multivariate linear regression reported associations of personality and empathy (outcome). IBM® SPSS® 21.0 generated statistical analysis.

Results: Conscientiousness, extraversion, agreeableness, and neuroticism have statistically significant ($p \leq .050$) correlations with empathy. Extraversion and agreeableness are significantly correlated with empathic concern ($r=0.4$ and $r=0.7$, respectively) and perspective taking ($r=0.4$ and $r=0.7$, respectively), while conscientiousness and neuroticism are correlated with personal distress ($r=-0.4$ and $r=0.3$, respectively). Three multivariate linear regression models - one for each of the three empathy domain outcomes - onto individual personality items revealed that the personality item “making people feel at ease” (agreeableness) is the best predictor of empathic concern ($p=.001, R^2=.54$); “having a good word for everyone” (agreeableness) is the best predictor of perspective taking ($p=.001, R^2=.64$); “am often down in the dumps” (neuroticism) is the best predictor of personal distress ($p=.001, R^2=.45$).

Conclusions: Relationships of medical student personalities (particularly agreeableness) and empathy

(particularly empathic concern) were reported early as significant baseline outcomes in the M-1 year. This helps determine the aspects of student personality associated with empathy, which is particularly important as students encounter patients more frequently in a 3-year program. Furthermore, a small set of personality items can help determine student empathy and help admissions personnel guide medical school applicants into the best-fitting timeline of each campus.

4. The Outcomes of Using Longitudinal M-3 Clerkship OSCE Scores as an Alternative Pathway to a Graduation Requirement End-of-Year Benchmark OSCE

Robert Treat, Medical College of Wisconsin

Background: To assess clinical skills competency and provide clinical skills exam practice opportunities, third-year medical (M-3) students previously completed 19 objective structured clinical exams (OSCEs) in seven required clerkships longitudinally through the academic year. This was followed by an end-of-M-3 year graduation requirement Benchmark OSCE (B-OSCE) which itself consisted of six OSCEs. During the transition of our medical school to a competency-based curriculum which is now currently implemented in 2014/15 for all M-3 students, an alternative pathway (AP) for passing the B-OSCE was created in 2011, using scores from the M-3 clerkship OSCE's as predictors on the B-OSCE. The AP provided high-performing M-3 students an option that reduced the number of OSCEs for them in the year. The purpose of this study is to report three years of results (2011/12-2013/14) of the AP and its impact on student NBME Step 2-CS scores.

Methods: Each year on April 1 after nine months of M-3 clerkships, students are assessed for a minimum of 12 of 19 required M-3 OSCE cases. Twelve M-3 OSCEs are needed to significantly predict B-OSCE performance. Eligibility for the AP requires that students do not fail more than one case of the 12 case minimum (<10%) within these nine months. Case failure is defined as a score less than two standard deviations below the class average of M-3 OSCE scores. The preliminary list of students eligible for the AP created from the statistical analysis is reviewed by all M-3 clerkship directors in early April on additional related clinical skills that would affect B-OSCE performance but not revealed solely through statistical analysis, resulting in a revised list of candidates. Eligible students of the revised list are notified in mid-April of the AP offer and can accept or decline the offer within one week. Analysis of OSCE scores was generated by IBM® SPSS® 21.0 and included Pearson correlations (r), analysis of variance (ANOVA), and interitem reliability analysis (Cronbach alpha).

Results: There was a significant correlation ($r=0.6$; $p=.001$) between the average of all M-3 OSCE courses at the end of nine months and the B-OSCE. Analysis reported no statistically significant difference ($p>.050$) in B-OSCE mean scores via ANOVA for students in different clerkship sequences. All M-3 OSCE cases have an inter-item reliability of Cronbach alpha=0.5-0.8. From 2011/12-2013/14, 185 (32%) of 572 students met the AP's statistical requirements. Subsequent clerkship director review permitted 95% of the 185 students to enter the AP, and only one student declined the offer to date. All students participating in the AP passed the NBME Step 2-CS exam.

Conclusions: Participation in the AP yielded 100% pass rate on the Step 2-CS exam and reduced the workload on students and staff. Use of the AP for three years provided evidence to reduce the number of M-3 OSCEs for the schools new competency-based curriculum which is currently in place for the M-3 students in the 2014/15 academic year.

5. The Improvement of NBME Subject Exam Blood Disorder Scores for the M3 Pediatrics Clerkship Using Team-Based Learning

Kris Saudek, Medical College of Wisconsin

Background: Speculation amongst our medical students exists as to whether Team-Based Learning (TBL) can improve scores on high-stakes examinations over traditional didactic learning. We developed a required TBL blood disorders (BD) module for third-year medical students on their pediatrics clerkship to increase National Board of Medical Examiners (NBME) pediatrics subject examination scores in this content area.

Methods: We analyzed institutional and national item difficulties for BD items from the NBME pediatrics content area item analysis reports from February 2011 to February 2014 for nine consecutive eight-week

clerkships before (pre) and nine consecutive clerkships after (post) the pilot (October 2012). Specific BD items included individual content areas assessing anemia, red cell disorders, thrombocytopenia, hemoglobin and management decisions. N=620 NBME pediatrics subject examination student total scaled scores from examinee performance profiles were analyzed pre/post for the same time period. Paired t-tests were used to analyze item difficulties for institutional vs. national scores; independent t-tests were used for pre/post comparisons of item difficulties and student total scaled scores. Cohen's d was reported as a measure of effect size. IBM® SPSS® 21.0 was used for analysis.

Results: The average of nine “pre” consecutive clerkship BD scores on the NBME content area item analysis report for our institution was .65 (\pm .19) compared to .62 (\pm .15) for examinees nationally (p =.346, Cohen's d =.15). The average of nine “post” consecutive BD scores for our students was .70 (\pm .21) compared to examinees nationally (.64 (\pm .15)) in which the mean difference was statistically significant (p =.031, Cohen's d =.43). The difference in our institutions pre (.65 (\pm .19)) and post (.70 (\pm .21)) BD scores trended higher albeit was not significant (p =.391, Cohen's d =.27); overall subject examination student total scaled scores used as an overall baseline were above national levels (70 (\pm 8)) and increased slightly from 76.8 to 77.1 (p =.632, Cohen's d =.04).

Conclusions: Institutional BD scores were higher than national BD scores for both “pre” and “post,” with an effect size that tripled from “pre” to “post” scores. Institutional BD scores increased after the use of the TBL module, while overall exam scores remained steadily above national norms.

6. M3 Pediatric Clerkship Patient Hand-Over Training Improves Medical Student Skill and Confidence Level

Saudek, Kris, Medical College of Wisconsin, Treat, Robert, Medical College of Wisconsin

Background: Gaps in healthcare communication have been cited as the leading cause of sentinel events in hospitals. Mandated limits on resident hours have increased breaks in continuity-of-care which is bridged with “sign-out.” There is insufficient data in the literature that medical students are being instructed and assessed on how to participate in a patient hand-off. The purpose of this study is to evaluate a previously described hand-off mnemonic with M3 medical students during their pediatric clerkship.

Methods: All students were expected to use SAFETIPS when signing-out on inpatient wards. Students were randomly assigned to a curriculum or control group, and completed patient hand-off confidence pre-surveys. The curriculum group participated in a workshop at the beginning of the clerkship teaching hand-offs using SAFETIPS. Faculty members assessed student hand-offs at the end-of-clerkship, followed by a student post-survey. The SAFETIPS Patient Hand-off Inventory had eight inventory scores measured with a three-point Likert-scale (0pts=lowest/2pts=highest). Seven survey items were measured with a five-point Likert-scale (5=extremely confident). Mann-Whitney U-tests and independent t-tests determined statistically significant differences between student groups (curriculum vs. control) for items in the inventory and pre/post surveys. Inter-item reliabilities were reported as Cronbach alpha. Statistical analyses were generated with IBM® SPSS® 21.0.

Results: The statistically significant difference (p =.001) in mean inventory scores (α =.70) for students in the curriculum (12.8(\pm 1.6)) vs. control (11.2(\pm 2.8)) is coupled to a large effect size (Cohen's d =0.67). Five SAFETIPS items reported significant increases (p ≤.050) for students in the curriculum vs. control. Significant increases in overall pre/post survey (α =.90) median scores are reported for students in the curriculum (pre/post difference=1.3, p =.001) and in the control group (difference=1.0, p =.001) for the survey. The largest increases for both groups was “using SAFETIPS to give/listen to hand-off of patients” (difference=2.0, p =.001).

Conclusions: M3 skill and confidence level giving hand-offs using SAFETIPS is improved with the use of a formal curriculum. Patient hand-off is a critical skill to develop; early introduction into the curriculum should provide earlier competency. This improvement in medical hand-off has the potential to decrease the number of medical errors related to communication.

7. Meeting your match: mock interviews for fourth year students to prepare them for residency interviews. William Hueston, Medical College of Wisconsin

Background: With the size of medical school classes growing and increased competition from off-shore

medical graduates, U.S. seniors are finding the match process for residency training positions more competitive. To help prepare students for the match process, we implemented a voluntary program of mock residency interviews for M4 students with the hopes that this would prepare them better for their actual interviews.

Methods: Fourth year students at the Medical College of Wisconsin were invited to participate in the mock interview program through emails in August 2014. A total of 110 students expressed an interest in the program and were matched with a physician in their intended specialty. One two evenings in September, faculty members conducted a 20 minute interview with their assigned student and then provided 10 minutes of feedback. Students completed assessment forms regarding the value of the experience immediately after the interview. Faculty provided written feedback for students as well as an assessment of their student's competitiveness for a position in their discipline. Students will also be asked in January 2016 to compare this experience with their actual residency interviews. All program evaluations were de-identified for analysis and the project was approved as exempt by the MCW Human Subjects Committee.

Results: 109 students completed the mock interviews on the assigned evenings. When asked to rate their experience, 80% of students strongly agreed that the process helped them identify strengths and weaknesses and 89% strongly agreed that the feedback they received was helpful. Eighty-nine percent strongly agreed that the experience was positive and 93% strongly agreed it should be recommended for all fourth year students. Faculty members rated the interviewing skills of the majority of students (54%) as "good" with 39% rated as "excellent." Seven percent were rated as only "fair" and 1% was rated as "poor." When asked about competitiveness within their field, 8 faculty members provided feedback that indicated the student would be at high risk for not matching.

Conclusions: A mock residency interview program was well received by students and faculty. Feedback from faculty regarding improvements in interviewing were well received by students. In some instances, the interview provided an opportunity to provide students with information that their specialty choice may not be appropriate. Additional data collected in January will give greater insight into the value of this program.

8. Methods and Instruments to Assess Self-Directed Learning Skills in Undergraduate Medical Education, Amy Thompson, University of Cincinnati

Background: Medical schools are responsible for promoting self-directed learning (SDL) skills in their students. The LCME requires medical school curricula provide active learning opportunities which develop these skills. To assist faculty, students, curriculum specialists, and educational researchers, a literature review was conducted for SDL assessment methods and instruments, with specific attention to published applications in medical education. The purpose was to learn what instruments had been used in undergraduate medical education, the contexts of the instruments' use, and medical student performance.

Methods: A literature search was conducted in PubMed, SCOPUS, and Web of Science from database inception until October, 2014. Articles were evaluated if their titles and abstracts were pertinent to the research questions. Articles involving non-medical subjects, allied health subjects, nursing students, residents, or practicing physicians were excluded, but their abstracts and methods sections were reviewed for specific instruments or assessment tools. An ancestry search and citation analysis for selected papers and review articles was used to maximize the articles available for analysis.

Results: Twenty-one articles were selected that described five instruments and assessments. Quantitative (n=13), qualitative (n=3), and mixed-method (n=4) data were reported. The described instruments and assessment methods were the Self-Directed Learning Readiness Scale (SDLRS, n=12), Oddi's Continuous Learning Inventory (n=3), the Jefferson Scale of Physician Lifelong Learning (JeffSPLL, n=1), educational portfolios (n=3), and learning logs (n=2). The articles described factor analysis results, students' readiness for SDL, students' change in SDL skills over time with and without interventions, and the occurrence of SDL. Most students were U.S. medical students (n=5), followed by Indian medical students (n=4) and Canadian medical students (n=3). Two studies measured mean SDL assessment scores over time, with conflicting results. Two studies correlated SDL scores with other clinical performance measures. Three studies reported mean SDL scores before and after educational interventions.

Conclusions: Assessment of medical students' SDL skills and progress toward competency is

challenging. Likewise, measures to evaluate curriculum performance in promoting SDL skills are limited. The published data are global and age at matriculation can vary. This must be considered when interpreting the literature. Furthermore, a thorough knowledge of an instrument's measured construct is essential. Qualitative assessments like educational portfolios and learning logs, are time-consuming and require training for mentors as well as students. Further validation studies are needed for these instruments before faculty can use them to assess student and curriculum performance in the SDL domain.

9. Medical Students as Educators: An Ethnographic Study of Near-Peer Teaching Medical Students as Educators: An Ethnographic Study of Near-Peer Teaching

Kidd, Bryan, Southern Illinois School of Medicine, Cianciolo, Anna, Southern Illinois School of Medicine

Background: Near-peer teaching (NPT) has been recommended for both undergraduate and graduate medical education, with benefits proposed for both teachers and learners. With respect to academic achievement, several studies have shown NPT to be effective or at least not inferior to traditional faculty teaching. While many have evaluated "Does NPT work?" fewer have investigated "How does NPT work?" Conceptual models of NPT posit that benefits accrue from cognitive and social similarity among NPTs and their learners. Practice theory suggests that teaching is an emergent property of context, such that what constitutes teaching is dependent on whom the teachers and learners are. Integrating practice theory investigative approaches with extant conceptualizations of NPT could empirically show how NPT happens and reveal how context shapes what is taken to be beneficial.

Methods: We are using direct observation and grounded thematic analysis to investigate the teaching practices of three types of small-group problem-based learning (PBL) tutor: fourth-year medical students (NPTs), basic science faculty, and clinical faculty. At our school, PBL is a central, required component of preclinical basic science instruction in Years 1 and 2, and NPT in Year 2 is a routine component of this curriculum. PBL sessions in three systems-based units during Year 2 have been video recorded for sampling and analysis by our investigative group comprising a medical educator, a fourth year medical student, and a second year medical student. Each member of our group views the same video sample independently, taking detailed field notes on our observations. When each of us has reached saturation in our notes for each tutor type in a given unit, we meet to discuss our findings. This discussion is videotaped and the transcription is the subject of our grounded thematic analysis. Observations by investigator type and by tutor type will be organized into a matrix to identify thematic areas of overlap and non-overlap.

Results: We expect the themes that emerge from the data to show how different perspectives shape what constitutes teaching practice, answering the questions: "What is teaching? To Who?" We hope to identify practices unique to NPTs from the perspectives of both a medical educator and students and to characterize what exactly is being assessed when NPT effectiveness is evaluated by different parties.

Conclusions: This ethnographic study will allow us to better understand the mechanisms underlying the effectiveness of NPT, supporting NPT development and assessment.

10. Pediatric Language of Satisfaction

Daniel Atwood, Medical College of Wisconsin

Background: Satisfaction is an important measure used to improve quality patient care. For adults, satisfaction is assessed through verbal communication. For children, age and cognitive development can make communication challenging. In a first step toward improving the quality of patient care for children, a study of pediatric language characteristics for the expression of satisfaction was performed. Data from this study will assist medical student education regarding pediatric communication.

Methods: Satisfaction is an important measure used to improve quality patient care. For adults, satisfaction is assessed through verbal communication. For children, age and cognitive development can make communication challenging. In a first step toward improving the quality of patient care for children, a study of pediatric language characteristics for the expression of satisfaction was performed. Data from this study will assist medical student education regarding pediatric communication.

Results: A total of 38 patients were enrolled. Fifteen patients were preschoolers (age 3-6 years old),

seven were school-aged (7-11 years old) and sixteen were adolescents (12-17 years olds). Word selection for satisfaction or dissatisfaction was consistent for the three scenarios. The most common words used by preschoolers were “happy” or “good” for satisfaction and “sad” or “bad” for dissatisfaction. School-aged patients used “happy” or “really happy” for satisfaction and “sad” or “very sad” for dissatisfaction. Adolescents used “happy” or “good” for satisfaction and “disappointed” or “frustrated” for dissatisfaction. Quantifying the degree of satisfaction was more common as age increased (very happy versus happy). Using abstract logic to highlight the complexity of satisfaction was more common as age increased (“still happy without a birthday gift since I know my parents love me”). Both quantification and abstract logic were utilized more often to express dissatisfaction compared to satisfaction. Preschool and school aged patients had more variety in the words of dissatisfaction than satisfaction. Adolescents had a much larger vocabulary. All age groups comprehended questions regarding satisfaction. All patients aged 13 or older correctly defined the word satisfaction.

Conclusions: Children ages 3 and older are capable of communicating satisfaction. Communication focusing on whether they feel “happy” or “sad” is recommended for preschoolers. Quantifying satisfaction with adjectives like “very” will be successful for school-aged patients. The variability in words used for satisfaction by adolescents lends to a less structured approach to communicating satisfaction. All patients express dissatisfaction more readily, so using the negative to anchor communication is recommended. Prior to this study the specific language of pediatric satisfaction was not identified. The words and language characteristics outlined in this study will assist medical students evaluate pediatric satisfaction and improve quality patient care.

11. Qualitative Investigation of Diagnostic Reasoning Deficits: An Interactional Approach

Anna Cianciolo, Southern Illinois University School of Medicine, Noelle LaVoie, Parallel, Debra Klamen, Southern Illinois University School of Medicine

Background: Widely accepted conceptualizations of diagnosis characterize the knowledge organization and memory structures that differentiate more and less accurate diagnosticians. The general prescription for aspiring diagnosticians is to acquire a store of symptom constellations via scientific study and direct clinical exposure. Conceptualizing diagnosis as an interactional achievement—an activity that occurs within a social context—offers a way of examining diagnostic strategy that may enable individualized diagnosis and treatment of reasoning deficits. The purpose of our investigation was to explore via student-faculty interactions whether different types of reasoning deficit were discernable in students’ diagnostic behavior, warranting differential feedback and remediation strategies to improve performance.

Methods: Three sources of data were used to investigate the properties of seven, at-risk medical students’ diagnostic reasoning and associated instructional feedback from faculty: (1) Direct observation of student-faculty interaction in a small-group diagnostic reasoning course. (2) Written diagnostic justification essays produced as part of a standardized patient examination and their faculty-assigned scores. (3) Faculty-prepared reasoning remediation prescriptions based on direct observation of the students’ standardized patient encounters and associated exam data, including diagnostic justification essays. We analyzed patterns emerging from these sources of data to discern whether there were identifiable and stable profiles of diagnostic reasoning deficits that were also associated with specific (and differentiated) feedback recommendations from faculty.

Results: When faculty in the reasoning course prompted individual students to verbalize their reasoning, five general profiles of deficit presented, and faculty (implicitly) responded in a differentiated fashion to each of them. These same profiles were discernable in students’ written diagnostic justifications. Despite the presence of relatively stable reasoning profiles within students’ essays, wide intra-student variations in diagnostic justification scores were found. Upon close scrutiny, these score differences could not readily be explained by case-specific knowledge. Faculty prepared reasoning remediation prescriptions appeared roughly equally sensitive to score data and observed reasoning, providing both convergent and divergent feedback compared to faculty facilitators.

Conclusions: These findings are consistent with research showing that supervisors can globally assess clinical competence from verbal case presentations. The results suggest that profiles of diagnostic reasoning deficits may be detectable and useful for conducting reliable narrative assessment of diagnostic reasoning and for providing individualized feedback for students with reasoning deficiencies. Further

research needed to validate these findings includes repeating this study with other cohorts and exploring the correspondence of various profiles to independent measures of biomedical knowledge and general reasoning.

12. Attention And Interpretation Mindfulness Training In Medical Students: Decreasing Stress And Increasing Resilience.

Laura Steinkraus, OUWB

Background: The Attention and Interpretation Therapy (AIT) program was developed by Dr. Amit Sood of Mayo Clinic. It uses techniques of joyful and kind attention, and methods of interpreting the external world, which practiced in small increments can increase quality of life. AIT had not yet been attempted with medical students. This research seeks to identify if practicing the AIT program as a medical student decreases stress and increases resilience.

Methods: First and second year OUWB medical students were invited to participate in four sessions, during which key AIT concepts were taught in an Oakland University classroom. 20 participants were enrolled; 12 second year students and 8 first year students. Surveys (Perceived Stress Scale (PSS), Mindful Attention Awareness Scale (MAAS), and Generalized Anxiety Disorder 7-item scale (GAD-7)) were administered pre and post-sessions, 12 weeks from baseline, and one year out. All surveys will be scored according to the mechanism contained within. Scores are considered dependent variables and will be analyzed in a repeated measures MANOVA.

Results: Results are pending- data collection has been completed and analysis in in progress.

Conclusions: It is expected that with regular practice of the AIT program, there will be a decrease in stress and increase in resilience, as measured by surveys over the course of a year.

13. Automated Assessment of Diagnostic Skill

Noelle LaVoie, Parallel Consulting, LLC

Background: This paper describes the first phase in our NIH-funded effort to develop and test an application of automated essay scoring for medical education. As part of standardized patient exams at SIUSOM students complete a diagnosis justification (DXJ) essay explaining their diagnostic reasoning for each case. The essays provide a mechanism for students to practice clinical reasoning skills and for faculty to diagnose reasoning failures. The primary barrier to widespread use of DXJ essays is the need for trained human raters to score them, a time-consuming process.

Methods: We developed automated scoring of DXJ essays for two standardized patient cases. The essays included student responses from 2 years (Case 1, n=144) and 3 years (Case 2, n=214) of administration at SIUSOM. Scoring models were trained to predict human raters' scores using semantic measures of essay content. The semantic measures were generated using a machine learning technology called Latent Semantic Analysis (LSA). Because LSA infers meaning using the latent structure of language it has substantial benefits over other automated text analysis techniques, such as word frequency analyses, key word identification, and parts-of-speech tagging.

Results: The reliability and agreement of the initial scoring models was determined by comparing the automated scores to the average human ratings and analyzing computer-human agreement vs. human-human agreement. For Case 1 the automated scoring model (ASM) reached the same level of reliability as the human raters (ASM $r = .52$, Human $r = .54$). Automated scoring approached human performance using the percentage of exact rating agreement (ASM exact = 16%, Human exact = 23%) and adjacent rating agreement (scores within 1 point on the 10 point scale; ASM adjacent = 62%, Human adjacent = 58%). For Case 2 the automated scoring model approached human reliability (ASM $r = .47$, Human $r = .63$), exact agreement (ASM exact = 15%, Human exact = 17%) and adjacent agreement (ASM adjacent = 60%, Human adjacent = 50%). We will present additional results including a second scoring approach and evaluations of generalizability.

Conclusions: Our results indicate that automated scoring of DXJ essays can be reliable and accurate enough to augment human raters. This application of automated scoring technologies can enable widespread assessment and development of diagnostic reasoning by reducing the resource demands of

essay scoring. Widespread DXJ essay administration, enabled by automated scoring, may also promote the development of national benchmarks for diagnostic reasoning performance.

14. Short term OSCE Remediation: process, results, and correlations

Valerie Hearn, University of South Dakota Sanford School of Medicine.

Background: In an effort to improve its OSCE remediation efforts and limit Step 2 CS failures, the OSCE committee at University of South Dakota Sanford School of Medicine identified at-risk and failing students on the end of third year high stakes OSCE. These students then participated in formative short-term remediation within the same week of the examination. This allowed us to capture students scheduled to take the Step 2 CS shortly after the OSCE.

Methods: The passing grade was raised from 70% to 75% on both SP encounters and progress notes. B line software allowed for quick computation of scores and identification of the demographic. Remediation occurred over 2 days. During the first day of remediation, students participated in self-directed grading and review of selected progress notes along with self-directed viewing and grading of selected videotaped SP encounters. Both activities were followed by feedback and discussion with a faculty member. Students' self-graded scores were compared with those of faculty examiners and standardized patients. Findings of those comparisons were then examined in relation to other measures of student performance. The second day of remediation consisted of the student performing a new SP encounter with associated documentation. This activity was also graded by a faculty examiner who then provided performance feedback.

Results: The evaluation process revealed not only underperforming students on a complete case (SP encounter and documentation) but also a significant number (23/54) who failed documentation requirements. Six of 54 students were required to complete the full two day remediation process. Students who completed the two day remediation were noted to overestimate their performances in self-grading using the corresponding examiner and SP grades as the gold standard on 25% of the checklists. Even those with equivalent scoring differed on the credited checklist items. All students who remediated performed well enough to pass the activity, and so far those who completed the remediation have all passed the Step 2 CS exam.

Conclusions: Short term remediation program has been beneficial in its first year. Additional Step 2 CS scores are pending. The implication of the disparities between the students' self-grading versus examiner and SP grading is unclear. We chose to look at those students' performances across the core clinical clerkships and found their scores to be 5% to 12% lower than self-scorers with equivalency with faculty and SP graders.

15. The impact of a writing guide on first year medical student perception of reflective writing and confirmatory factor analysis of the SRIS

Kathryn Shirley, Nationwide Children's Hospital.

Background: Reflection is a defining characteristic of professionalism, and reflective writings are now integrated in to the medical school curriculum. Barriers to reflective writing include a lack of understanding of its relevance, which can prevent true analysis of tacit aspects of potential learning situations.

Methods: The study is designed to determine whether first year medical students will have increased acceptance of and benefit from self-reflection exercises when provided with a guide to reflective writing. The Self-Reflection and Insight Scale (SRIS) was used to evaluate student acceptance of reflection before and after receiving an educational intervention. This consisted of a 5-page guide to reflective writing, which defined reflection, described its benefits, and provided tips for completing reflective writing assignments. Statements related to the perception of the guide were added to the SRIS. Of 195 first years, 185 consented to participate. Of the 185, 92 were randomly selected to receive the guide with the first reflective writing assignment, and 93 will receive it as a delayed intervention. After the first assignment, both groups were asked if they had read and used the guide to evaluate for contamination.

Confirmatory Factor Analyses (CFA) using both maximum likelihood (MLE) or Bayesian estimation were used to clarify whether the factor structure of the SRIS was maintained in our sample of medical students.

Results: Of the intervention students 56/79 (70.9%) reported reading the guide and 33/78 (42.3%) reported using it. Of the control group 21/83 (25.3 %) reported reading the guide, and 11/83 (13.3%) reported using it. Data was analyzed using RM ANOVA. We analyzed baseline vs. follow-up self-reflection and insight subscale responses for three groups: 1) Initial vs Later Guide Assignment, similar to an “intent to treat” model, 2) Read vs. Not Read the Guide, regardless of group assignment, and 3) Used vs. Not Used the Guide, regardless of group assignment. No difference in scores on the subscales of the SRIS existed between any of the groups.

Previous formal instruction on reflective writing did not indicate differences in the baseline SRIS scales of self-reflection or insight. However, students who currently kept a journal had a significantly higher SRIS self-reflection score than non-journalers ($t = 3.05$, $P < .003$: Mean (SD)_{yes} = 59.08(6.63), Mean (SD)_{no} = 53.77(8.30)), but there was no difference between groups in the SRIS insight scores. The results of the CFAs reveal that only the factor loadings for item 1 for the self-reflection scale and item 9 for the insight scale are consistently below 0.50 whether using MLE or Bayesian CFA and Pre-intervention or Immediate-post intervention data. All other items had relatively high factor loadings for their respective factor.

Conclusions: Our reflective writing guide did not change scores on the self-reflection and insight subscales of the SRIS. Repeated use of the guide with multiple reflective writing assignments over time may be needed to change scores on the SRIS. However, previous literature has discussed the importance of a reflective writing coach, and this study could support the idea that a didactic about self-reflection is not as strong an intervention as coaching. Some students who were not initially assigned the guide reported both reading and using it, perhaps suggesting a desire for more information about reflection. CFA using either MLE or Bayesian estimation provided similar results for the 2-factor, 20-item SRIS when using either baseline or initial follow-up responses from medical students. There was some concurrent validity evidence for the Self-Reflection scale, as students who indicated that they currently kept a journal or diary had significantly higher Self-Reflections scores than those students not previously involved in journaling.

Please note, this topic was previously presented at PAS but the Factor Analysis data is new.

16. Medical Students: A qualitative investigation on the perception of quality and patient safety in the healthcare setting.

Natasha Mehta, Kettering Health Network.

Background: In 2001, Crossing the Quality Chasm, by the Institute of Medicine (IOM), proposed six Aims for Improvement in healthcare. It stated that care should be safe, timely, equitable, effective, efficient, and patient centered. This study aims to qualitatively identify what errors medical students are observing and their willingness to report perceived deficits to their superiors.

Methods: Expanding the quantitative portion of a 2012 study examining medical student perceptions of patient safety and quality improvement (Swamy et al., under review), the current IRB-approved study provides a qualitative analysis of free-text responses of third-year medical students ($N = 53$) collected during the study period. Two investigators separately analyzed qualitative responses and reconciled differences to develop a code book. Using line-by-line coding, each response could fit into more than one category, with no limit to number of categories. A different investigator verified the coding. A constant comparison method was used to identify connections between categories and themes.

Results: Responses within each of the six aims were split into four type categories: diagnosis, treatment, screening, and systems-based. The same responses were then split into cause categories, which depended on the aim. Responses for each aim varied from 12-40. Most of the safety concerns involved medication treatment prescription. Delays were observed in every area of a patient’s care. Responses involving the inequality of patient care highlighted systems-based difficulties with insurance coverage and physician tendency to label patients. Although third-year medical students lack experience with standards of care, many deviations from standard of care were observed to be due to past experiences of the physician. Overuse of resources mostly involved insurance and malpractice concerns. Examples of care that was not patient-centered involved systems-based issues such as insurance and communication. All causes of the deficits seen in IOM’s aims for improvement involved human error. A third of those surveyed used the word “jaded” to describe how their experiences had altered their perception of medicine.

Conclusions: Instead of working to create change, medical students are witnessing these system deficits

and passing judgment. It is a large responsibility for one person to create a safe healthcare environment, foresee and avoid delays, resist patient stereotypes, memorize evidence based guidelines, avoid wasting resources, and spend more time with patients. We propose that education about the methods of quality improvement can: empower individuals to create change across all six aims, provide appropriate response techniques to perceived deficits, and improve interdisciplinary communication.

17. Adult Vaccination History: Goals for Quality Improvement and Better Population Coverage

Maggie Rechel, Boonshoft School of Medicine

Background: Influenza vaccination is estimated to lower hospitalization rates and mortality in the elderly by 27% and 48% respectively yet only 2/3 of those aged 65 and older report receiving a flu shot each year. Younger persons are even less likely to receive a yearly vaccination (31.1% of those 18-49) leading to increased mortality but also serving as a reservoir for influenza. Less is known about the shingles and pneumococcal vaccines but presumably similar barriers might exist to access.

Methods: As part of a pilot project we have interviewed 120 adults at local family physicians' offices during the summer months regarding their vaccination status including why they may have chosen to not receive a particular vaccination. This winter we will be expanding the research to include a conversion component to see if those that receive just the CDC handout are more likely than those who have a medical student available to answer questions to receive their vaccinations either at that time or report that they intend to in the near future.

Results: 87% of respondents have received a flu shot in the past, while only 57% got the flu shot in the previous year. Of those that didn't receive the flu shot, 5.5% had a relative or their own non-allergic bad reaction, 4% had an allergic reaction, 13% were too busy, 5.5% don't like shots or are afraid of needles, 20% stated they got the flu even though they got the shot, 15% had beliefs (non-religious) about not getting vaccines, 9% just missed it this year, 11% state they never get sick, 15% feels like they don't need, 2% lacked insurance. The Zostavac vaccine is given to prevent shingles and is recommended for all aged 60 and above. 47% of our sample was 60 or over and just 39% of that group reported receiving Zostavac. Of those aged 60 or older that hadn't received the shingles vaccination, 14% are not concerned or don't think they need it, 30% didn't have info, hadn't heard of it, or hadn't given it much thought, 13% intend to but haven't yet, 38% reported that they have had shingles/never had chicken pox, and 5% don't like vaccines/needles. 46% of the respondents reported receiving the pneumococcal vaccine, however, of those aged 65 and older, the universal recommended age, nearly a third (32.5%) had NOT received the vaccine. Of those that received the vaccine, 76% had received it at their PCP, 13% at pharmacy, 2% at the VA, 9% at the hospital. Of those that based on age should have had the vaccine but hadn't 8% hadn't done it yet but intended to, 23% felt it wasn't needed, 61% didn't know about it/didn't have information about it, 8% stated they had already had pneumonia.

Conclusions: For the shingles and pneumococcal vaccinations a significant proportion of respondents report that they lack information or were unaware that the vaccination was recommended for them generally (30% shingles, 61% pneumococcal). These individuals would be helped by a routine vaccination check by the nurse upon check in and literature handouts as well as encouraged discussion with their doctor. Further, many reported that they were planning on doing it but hadn't yet (13% shingles, 8% pneumococcal) and doing a check in at every visit would likely encourage them to get the vaccination then. A significant number of respondents report that they got sick or have already been sick with the disease and therefore don't need the vaccine (31% flu, 38% shingles, 8% pneumonia). Further, many report that they don't get sick as a reason to not get the flu vaccination (11%). These individuals have incorrect assumptions about vaccines regarding their mechanisms and effectiveness and though they may continue to choose not to be vaccinated, it is important that they be aware of the recommendations as well as the scientific consensus surrounding these objections.

18. Investigating the Effect of a Quality Improvement Intervention on the Internal Consistency of Examination Themes and Patterns of Student Performance in a Medical School Anatomy Course

Courtney Orsbon, University of Chicago

Background: In recent years, increasing numbers of instructors at American medical schools have

adopted computer based testing, yielding a growing pool of data on course performance and patterns of responses to different concepts. However, significant holes remain in our understanding of the effects of such changes on student test scores and aspects of thematic performance. We investigated whether student test scores and the internal reliability of subject themes in an introductory anatomy course at the University of Chicago Pritzker School of Medicine would change substantially in the wake of a quality improvement initiative centered on the use of GALEN (Gross Anatomy Learning Evaluation Navigator), a web application developed for analysis of computer-based exam data and communication of test results.

Methods: All data were from the first-year anatomy course at the University of Chicago. To investigate internal reliability, we calculated Cronbach's alpha for the respective themes (Development, Function, Imaging, Lymphatics, Nervous Systems, Structure, Tissue Histology, and Vasculature) tested across anatomy exams and for groupings of themes. Because tiebreaks for question theme selection in items with multiple tags could slightly alter the sets of queries used in generating an alpha, we conducted five runs of our model to generate the alpha averages. We also wanted to look at how student performance over the course of the introductory anatomy class changed in 2013 compared with 2014. We compared the aforementioned alphas as well as the distributions of exam scores between the two years using established statistical analysis methods like the Wilcoxon rank-sum test and the Kolmogorov-Smirnov test.

Results: Using the Wilcoxon rank-sum test, we found that the ranks of the 2014 alphas for the Function, Innervation, Structure, Medical Imaging, and Tissue Histology themes, as well as the alpha for the cumulative exam score, were statistically significantly higher ($P < 0.05$) than the corresponding ones for the 2013 alphas. Other increases were seen for Development and Vasculature, though these were not statistically significant. Curiously, there was a decline in the ranks of the Lymphatics alpha ranks from 2013 to 2014, though this difference was also not statistically significant. While mean performance on different themes and exams was roughly similar, the Kolmogorov-Smirnov tests revealed significant changes in several of the distributions of thematic scores before and after the introduction of GALEN.

Conclusions: The demonstrable improvement in reliability across most themes and exam groupings between 2013 and 2014 may stem from the fact that GALEN helped instructors to identify poorly worded questions and amend answer banks for queries on the computerized exams. This is important, because anatomy instructors would then have better evidence to evaluate student progress on understanding themes, rather than imperfect measures clouded by errors introduced from poorly-constructed queries. That said, factors other than better-phrased questions and more comprehensive answer banks could be influencing test grades in the anatomy course studied. In future work, we plan to extend our analysis to subsequent exam data to see whether there are patterns of internal consistency and student performance changes similar to those observed from 2013 to 2014. We may also replicate this study in other quality improvement settings.

19. Beyond One and Done: Sustaining Curriculum Interventions

Diane Brown, Medical College of Wisconsin

Background: Recent reports highlight that physicians-in-training are inadequately prepared to care for the rapidly expanding older adult population. Those 65 years and older utilize more health care resources than any other age group. Almost every subspecialty clinician independent of the health care setting takes care of older adults necessitating ongoing training for this complex patient population. The challenge for those who promote curriculum change efforts and innovation in training is to prevent "curricular drift" back to the status quo once funding and/or a project is completed

Methods: To address the need for in-depth training in geriatrics education, each of 16 specialty residency programs, led by an interprofessional team (e.g., geriatricians, medical educators, medical students), collaborated and designed specialty-specific geriatric curriculum. Each Geriatric Education Team (GET) with funding from the Donald W. Reynolds Foundation identified training gaps through formal needs assessment and then designed curriculum specific to their training program's needs. Needs based curricular components ranged from team-based learning exercises, ½ day curriculum events, and grand rounds to OSCE's and simulations each designed to be embedded within their residency training programs and resources. To support engagement, scholarly dissemination was supported and tracked. To determine if these collaborative geriatrics curriculum efforts were sustained, all GET specialty leaders received an eight-question survey in late Fall 2014 to determine: (1) if they continued to use the curriculum developed;

(2) modified the curriculum and continue to use; (3) introduced additional geriatrics education into their residency programs.

Results: Eleven GETs (69%) to date have responded to the survey. 64% (7/11) continue to use their curriculum with 4 teams responding they made minor revisions. When asked if they have introduced additional education, 55% of those polled responded they continue to increase geriatrics-specific education into their programs. Reason for sustaining the curriculum included: (1) the need for geriatric-specific education per RRC requirements; (2) the collaborative efforts between each interprofessional GET team focused curriculum on program needs (e.g., topic area not forced by geriatric specialists) ; (3) Sub specialty team members became champions within their residency training programs successfully leveraging products to meet RRC scholarly requirements. Overall, collaboratively the GETs successfully had a total of 51 acceptances to conferences (e.g., posters, workshops, podium), 8 educational materials accepted to MedEdPORTAL/POGOe and 3 journal articles.

Conclusions: Curriculum innovations can be sustained post extramural funding when target specialties are actively engaged in selection, design, implementation, evaluation and scholarship.

20. Professionalism Incidents During Third-year Clerkships: An analysis of professionalism papers

Janet Lindemann, University of South Dakota Sanford School of Medicine

Background: Third-year students at the University of South Dakota Sanford School of Medicine are required to write a paper describing three or more incidents within their clinical learning environment that display professionalism behaviors, either positive or negative. The purpose of the study was to determine which of seven categories of professionalism behavior students describe (respect, communication, altruism, responsibility, excellence, integrity, or leadership), whether the behaviors were more likely to be positive or negative, and whether particular clinical specialties emerged. Our curriculum also changed from predominantly block clerkships in 2009 to entirely longitudinal integrated clerkships in 2014.

Methods: Professionalism papers were analyzed and compared for narrative content in 2009 (n=51) and 2014 (n=53). Students had been instructed to identify which of seven behavior categories were displayed in the incidents they described. The study authors determined if the incidents were positive or negative. Incidents were compared across specialty areas when the specialties were identifiable.

Results: The student papers described 515 incidents, a mean of 4.2 incidents per paper in 2009 and 5.7 incidents in 2014. Incidents were 60% positive vs. 40% negative in 2009, and 66% positive vs. 34% negative in 2014. The most likely professionalism behavior categories to be described were communication (22% of incidents in 2009, 25% in 2014) and respect (22% of incidents in 2009, 17% in 2014). When subgrouped into positive incidents, good professional communication was most frequently described (60% of incidents in 2009, 65% in 2014). These incidents were frequently examples of caring and compassionate communication, often when delivering bad news and sometimes when admitting mistakes. Negative incidents most frequently described a lack of respect (60% of incidents in 2009, 58% in 2014). These incidents were often speaking disrespectfully about patients, staff or colleagues. When identifiable, the most frequently cited specialty was surgery (52% of incidents in 2009, 46% in 2014). In the subgroup of surgery incidents, positive incidents edged out negative incidents (54% vs 46% in 2009, 57% vs 43% in 2014).

Conclusions: In papers describing professionalism incidents, students most frequently identify professional behaviors in the categories of communication and respect. Overall, students are more likely to describe positive behaviors than negative; however, in the behavior category of respect, students are more likely to describe negative than positive behaviors. There were no significant differences between papers in 2009 and 2014, suggesting the curriculum change did not significantly affect the professional behaviors observed.

21. The Community Homeless Interprofessional Program at Wayne State

Erica Saunders, Wayne State University

Background: Wayne State University (WSU) programs: Medicine, Pharmacy, Social Work, Physical Therapy, Nursing, Business, Psychiatry, and Waller Clinic collaborated to develop a program to educate

persons experiencing homelessness about medical and community resources. Additionally students provide basic screening and referral services for the homeless patient's health and social needs.

Methods: The Community Homeless Interprofessional Program (CHIP) started in late 2013 when a local church approached the medical school about providing basic medical services at a time after a weekly breakfast they hosted for the homeless of Detroit. Other professional schools were invited to join in the initiative. During the months of January through March collaborative meetings were held with stakeholders from the Cathedral and WSU. Agreement was set on a once monthly clinic program, and the first program occurred in April 2014. Each college is responsible for providing both a faculty member and students at the monthly clinic. Students are divided into interprofessional teams and assigned to see specific patients that self-identify.

Results: Critical needs identified during the development process of the clinic included: basic medical supplies, storage, internet and EMR access, clinician and physician support, and private consultation space. The program started at Waller Clinic which was next door to the Cathedral but moved to being operated at the Cathedral due to inability to pay overtime for Waller staff. On average, 5 patients per clinic may be seen for a full medical evaluation plus an additional 5-10 for social or housing needs. These homeless patients are predominately African American males. Feedback on communication and assistance from health professional students showed: 100% stated they were treated with respect; 94% said the students were sensitive to their needs; 88% indicated the information provided was easy to understand; 94% were provided with information to improve his or her health; 88% were given information on medications; and 94% thought assistance provided during these sessions was valuable. Data is being collected and recorded from health professional students involved in the program and will be reported during the presentation.

Conclusions: CHIP has provided an opportunity for interprofessional programs at WSU to meet a community need while also affording students a chance to learn from one another and a unique patient population. Eight program dates have occurred and the way the program day is run has continued to evolve.

22. Student perceptions of a customized NBME practice exam.

Dawn Bragg, Medical College of Wisconsin.

Background: Revision of a medical school curriculum requires new assessments to inform students of how well they have learned and integrated the material. The Discovery Curriculum was designed to integrate the basic and clinical sciences throughout the four years of medical school. A customized National Board of Medical Examiners (NBME) exam served as one of multiple metrics used to evaluate the progress of the curriculum. Additionally, the exam was expected to benefit students by indicating how well they integrated course material across the first year and providing practice for taking board-style exams. With these goals in mind, an exam was offered at the end of the first-year curriculum. This study examines students' perceptions of the value and benefits of this practice NBME exam.

Methods: First-year course directors developed a customized NBME exam with questions in the format used by the USMLE Step 1 exam. Exam questions covered courses that were offered throughout the school year. Students were encouraged not to study for the exam but continue their normal course of study for their first-year spring courses. Two days after the exam, students completed an on-line survey to give their feedback about the exam.

Results: There was a 53% (N=113) response rate. Students' feedback on the quality of the exam was that the exam was balanced, not weighted to any specific area (Strongly Agree/Agree = 83%) and questions selected were representative of the material they learned (Yes = 91%). Students also reported that this practice exam helped them understand how to prepare for the Step 1 exam (Strongly Agree /Agree = 73%) and that the experience gained will now alter how they prepare for it (Yes = 63%). Sixty-seven percent of students felt they performed as expected for their level of preparation and six percent felt they performed better. Exposure to integrated questions, becoming familiar with the NBME/USMLE test rules and identifying areas of strength and weakness were the top three ranked as most value gained from the practice exam.

Conclusions: A majority of the student respondents indicated that the practice exam was helpful for them

to understand how to prepare for the Step 1 exam. Providing this opportunity to students early in their medical studies is a valuable way of getting them accustomed to such exams, alleviating fears and allowing them to develop strategies that will help them successfully take board exams during medical school and beyond.

23. Does previous team experience influence incoming medical students' attitudes about teamwork?

Kathryn Huggett, Creighton University School of Medicine

Background: The benefits of Team-Based Learning (TBL) in medical education include promoting active learning and problem solving. Previous studies demonstrated that participation in TBL changes student attitudes about working in teams. In this study we measured incoming medical students' perceptions of the value of teams and assessed the influence of previous team experience on attitudes about teamwork.

Methods: With IRB approval and permission of survey author Dr. Larry Michaelsen, we administered the Value of Teams (VOTS) survey to incoming medical students (73 male, 77 female) in August 2012. The 23-item survey measures two dimensions of perceived value of learning in groups: working with peers and value of group work. Higher scores on a 5-point Likert scale indicate positive perceptions of teamwork. We then reviewed the same students' medical school applications for team experience. We created a team-experience scoring template by discussing the scoring of a pilot application set until reaching consensus. We extracted relevant team data, created a team experience score for each student, and calculated the correlation between team experience score and score on each VOTS item.

Results: No correlation of team experience with any of the responses to the VOTS was statistically significant. The item closest to a positive correlation was, "It is important to encourage the expression of diverse points of view when working in groups" [$r=.159$, $P > 0.05$]. Responses revealed students appreciate the value of teamwork more than the actual experience. Most (97%) agreed working with peers will help their career. The majority agreed that group work aids retention of important concepts (63%) and that in-class group work is productive (60%). However, many (59%) expect uneven participation by team members and fewer than half (48%) found it more enjoyable to work in groups than alone.

Conclusions: Incoming medical students' previous team experience is not consistently related to their perceptions of the value of teams. Teamwork experience may foster both positive and negative perceptions. Study limitations include (1) conducted on one class at a single school; (2) difficulty quantifying team experience; (3) potential for applicants emphasizing individual effort (e.g., use of "I" over "we"). Information about teamwork is not specifically requested on the AMCAS application, so team experience cannot be accurately measured. We suggest admissions procedures ask specifically for information about team training and experiences. This insight into how new medical students perceive teamwork may guide faculty efforts to develop team activities for instruction.

24. Substance Use Disorders Education: Initial Results of the COPE Medical School Curriculum Survey.

J. Harry Isaacson, Bonnie Wilford, John Renner, Margaret Kotz, Cleveland Clinic

Background: COPE — the Coalition on Physician Education in Substance Use Disorders — was formed in 2010 to support and assist medical school faculty in their efforts to teach medical students about the nature of alcohol, tobacco and other drug use disorders and to ensure that medical students receive appropriate training in the skills they will need to prevent, screen for, diagnose and treat substance use disorders (SUDs) in their future patients, regardless of their medical specialty, practice type or location. A key component of COPE's action plan is the COPE Curriculum Survey, the purpose of which is to identify the current state of teaching about SUDs at medical schools and gather information on resource needs, teaching strategies and resources used that may be helpful to faculty at other medical schools.

Methods: The survey contains 13 items, the first 11 of which ask whether certain subjects are part of the curriculum at the respondent's medical school. The survey has been administered during a series of regional summits COPE has organized in collaboration with the Substance Abuse Services Administration (SAHMSA). To date 3 regional summits have occurred including 45 schools.

Results: The percentages of schools that include topics related to substance use are listed in the table. The most common teaching method used was didactic lectures followed by experiential learning.

Topic Percent of schools that include in curriculum

Basic science/pharmacology 96

Screening/brief intervention 88

Psychiatric disorders related to SUD 86

Medical disorders related to SUD 76

Referral to specialized treatment 66

Adolescent/young adult and SUD 64

Safe prescribing 54

Neonate/children affected by substance use 50

Pregnancy and SUD 48

Resources for impaired medical students 32

Elderly and substance use disorders 22

The survey also asks respondents to identify trusted and/or frequently used sources of information about SUDs and their treatment. (The sources most frequently cited to date are the National Institute on Alcohol Abuse and Alcoholism [NIAAA], the Centers for Disease Control and Prevention [CDC], and the National Institute on Drug Abuse [NIDA].)

Conclusions: Information gathered through the survey suggests an ongoing need for training and is reflected in many of COPE's programs. When the survey is completed through additional regional meetings, results will be shared with medical schools, interested private sector organizations, and government agencies to facilitate improved training of medical students in substance use disorders.

25. A Train-the-Trainer Model for Student Tutoring

Jennifer Janowitz, Dawn Bragg, Medical College of Wisconsin

Background: One of the responsibilities of supporting medical students is to provide supplemental academic support to prepare them for the USMLE exams. Based on a needs assessment, a structured process was developed to help students integrate knowledge learned in the first two years of medical school and apply it to their USMLE Step 1 exam. This program used a train-the-trainer model where M3/4 employee tutors were selected as coordinators. Coordinators trained/supported 80 volunteer M3 students as they tutored 180 volunteer M2 students in small groups. Other characteristics of this program were: 1. M3 tutors bring experiential knowledge/relevance to study sessions through cross-pollination of medical class knowledge; 2. Board-style questions, case-based approaches and common syllabus are used to guide discussions; 3. Test-taking/high yield study strategies are discussed; and 4. Program provides opportunities for professional development. The purpose of this study was to evaluate the success of the program.

Methods: A specially designed two-part survey was developed to assess students' perceptions of program quality and administered electronically. Part one of the survey consisted of 13 items using five-point Likert scale (1=Never, 5=Always) and focused on program effectiveness. Part-two focused specifically on M3 tutor effectiveness using an effectiveness scale (1=Highly ineffective, 5=Highly effective). Student perceptions were analyzed using descriptive statistics.

Results: Fifty-two M2 students responded to the effectiveness survey (29% response rate). While students' mean ratings of items on program effectiveness were all above 4.0 on the 5-point scale, the highest mean ratings were for providing adequate support, giving timely feedback and advancing student understanding of Step I exam process (Mean = 4.5). Eighty-three percent of respondents rated the program "good" to "excellent" with an overall mean of 3.2 on a 4-point scale. Ninety-four percent of students rated M3 tutors as "effective" to "highly effective". Open-ended items identified areas of improvement in consistency across M3 tutors, adherence to syllabus and earlier start to tutoring sessions in the M2 year.

Conclusions: The newly structured tutoring program and the tutors were well received by student respondents. Of importance is that the program advanced student understanding of the USMLE Step I

process and that this type of environment is conducive to learning by diverse learners. It is believed that this structure would also lead to increased skills in teaching, leadership and professionalism. These hypotheses will be examined in a subsequent study.

26. A Pilot Study Exploring Student Preparedness for the USMLE Step 2 CS Exam

Simone Brennan, Wayne State University School of Medicine

Background: Since the introduction of Step 2 CS (S2CS), United States Medical Schools have modified curriculum to enhance clinical skills training (Gilliland et al, 2008). In 2013 USMLE increased performance levels for passing the Communication and Interpersonal Skills and Integrated Clinical Encounter components of the exam (ECFMG, 2012). In light of these changes, Wayne State University School of Medicine (WSUSOM) recently reviewed and revised S2CS preparatory exercises and materials. Changes include enhancements to the timing, structure, and content of the MS3 OSCE to more closely resemble S2CS. Enriched reporting mechanisms provide students with detailed performance feedback and, as indicated, an opportunity for remediation prior to taking S2CS. Prior to and after the OSCE students are also provided with a number of written and on-line resources to aid in Step 2 CS prep. What remains to be understood is how effective these efforts are in preparing students for Step 2 CS.

Methods: In September, 2014 WSUSOM invited all MS4 students who completed the S2CS to participate in a Focus Group to explore these very issues. This pilot research study received IRB approval from WSU. A total of five students participated in the pilot focus group; two additional students who were unable to attend, agreed to key informant interviews shortly after the focus group session. Focus Group questions explored all aspects of preparing students for S2CS, including Clerkship experiences, WSUSOM on-line resources, the OSCE, and external resources (study guides, websites, etc.). The focus group was recorded and transcribed verbatim; written notes were taken during the key informant interviews.

Results: Thematic analysis of the responses suggest that, overall, students feel Internal and Family Medicine Clerkships best prepared them for S2CS, due to the focused nature of patient encounters. Students found the OSCE and the on-line materials were useful but made several recommendations for improvement, notably the need for greater emphasis on the post-encounter note. Students described the note-writing expectations for CS to be especially challenging, with one student stating, "The CS note is completely different from what we are taught in Clerkships...it is a different beast, not like real life". Particularly challenging are the character and line limits imposed on the S2CS post-encounter note. One additional unexpected theme raised by students is the notion of rumors. Students noted that they were influenced by informal conversations with residents who had taken S2CS in earlier years and indicated that the exam was a 'rubber stamp' and that students "...just had to show up" to pass the exam. As such, they felt some students may not have invested adequate time in preparing for the exam as was warranted.

Conclusions: Feedback from this pilot study highlight important considerations, as the WSUSOM moves forward in developing more meaningful and relevant S2CS preparatory materials. Findings from this pilot will serve to inform the next phase of this exploratory research, which will consist of an online survey offered to the entire MS3 class in 2015.

27. Accepted Student Choices: Factors and Sources that Influence Medical School Selection

Christina Grabowski and Angela Nuzzarello, OUWB

Background: Selecting a medical school is one of the most difficult and most important decisions a student can make. The reasons students select particular schools are varied, but it is reasonable to suspect that trends can be identified. Additionally, many sources provide information and advice on medical school selection. Little research exists on the sources of information medical students utilize for decision making. What does exist is predominantly from overseas where admissions processes may differ. This study was conducted to better understand the phenomena of medical school choice by investigating the factors that drive students to select a school as well as the sources of information students use in decision making.

Methods: A non-experimental, cross-sectional research design was utilized in order to examine and describe admissions choices and influential factors. An electronic survey was distributed to all students who were admitted to the Oakland University William Beaumont School of Medicine during the 2014

admissions cycle, regardless of what school in which they ultimately enrolled. Survey questions gathered information on medical school selection, demographics, factors that may have influenced choice, and sources of information for medical school decision making. Data were analyzed utilizing descriptive statistics.

Results: Results indicate that the clinical partner is the strongest factor influencing students' choices of medical schools in the overall category, both age categories (23 years and under/over), as well as in-and out of state students. For underrepresented minorities, the curriculum was the most significant factor influencing choice. For most categories, curriculum was the second most influential factor, whereas with underrepresented students clinical partner was second. Some factors, such as location and cost, differed by demographic group. In terms of sources of information, the interview day experience had the highest mean for each category, with current medical students being the second most popular source of information for the decision making process.

Conclusions: Though a variety of factors are involved in students' medical school selection processes, the factors most central to their academic growth are the most critical. Additionally, students are bombarded with information to aid in the selection process, but traditional means such as the institutions interview day and input of current students remain the most utilized sources. Students also report looking to faculty for information. While it is important to provide ample information through various sources, educators should be cognizant of what sources students rely on most closely as well as the different parties delivering information to ensure consistency and accuracy from all fronts.

28. Assessing Humanism in Medical Education: A Review of the Literature

Karen Szauter, University of Texas Medical Branch

Background: There have been recent calls for increased emphasis on humanism in medical education. Programs to enhance humanism are underway at many institutions. Humanism is a complex, multifaceted phenomenon and the assessments or measurement tools used in investigations or evaluations operationalize how we view and define this concept. Careful examination of our assessment strategies will enable us to be more precise as we develop and evaluate educational programs and assess our learners' development. The question underlying our current work is: how do medical educators assess humanism and how does the measurement impact what we know about humanism in medical education?

Methods: An extensive review of the English language literature from 2000-2013 has been undertaken. Search terms included "humanism" as well as related concepts: integrity, excellence, compassion, altruism, respect, empathy, and service. Additional articles were identified through forward citation searches and bibliography reviews. Papers were retrieved for full review if the peer reviewed study focused on medical students and had an identifiable process/tool for the measurement of humanism. A data extraction form was developed and refined by the study team (authors); the coding process was done in triplicate initially to calibrate the team. Any papers that were suggested for exclusion after full review were discussed with the entire team.

Results: Over 1000 titles and abstracts were initially considered with 260 papers pulled for full review. To date, 191 have undergone detailed review with 138 meeting full inclusion criteria. The papers include studies from 23 countries; 60.1% from US institutions. The majority are quantitative studies (76%), qualitative (19.2%) and mixed methods (3.8%) being less frequent. The most commonly measured humanism constructs were empathy (76.8%), compassion (16.7%) and respect (12.3%). Several papers included more than one feature of humanism. The majority of articles measured features of humanism through self-response to surveys; ratings by standardized patients, peers, and faculty are also described. Qualitative studies typically included reviews of reflective essays. The studies addressed humanism constructs in medical students at all stages of training.

Conclusions: Our work has identified several limitations in the assessment of humanism based on current literature. The dominance of papers reporting empathy measures, and the fact that many focus on a single measurement tool, limit our current understanding of many features of humanism in medicine. We propose that future research focus on multidimensional measures, with refined and validated measurement tools, to enhance our understanding of the complicated construct of humanism.

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29. Assessing the Impact of Multilingual Language Sessions at Wayne State University School of Medicine
Navina Kapur, Wayne State University School of Medicine

Background: At the Wayne State University School of Medicine (WSUSOM), students are provided with skills to communicate in many non-English languages prevalent in Southeastern Michigan. Detroit is home to many non-English speaking communities. Communication between doctors and patients in their native tongue is critical, as it is “highly correlated with better patient adherence,” by as much as 1.62 times (Zolnieriek and DiMatteo, 2010). Thus, it is imperative for medical students to be able to directly communicate with the diverse population they serve under the patient-centered care model. WSUSOM students volunteer at non-profit health clinics in Detroit where they encounter Spanish-speaking patients. Spanish is also utilized during mission trips to Nicaragua, Peru, and Ecuador via the medical school’s World Health Student Organization. Medical students use Mandarin to communicate with patients at health screenings in partnership with the Detroit Chapter of the Association of Chinese Americans. The Hindi language is employed by students volunteering at the Michigan Association of Physicians of Indian Origin clinic and health fairs organized by the Bharatiya Temple. Southeast Michigan is home to one of the largest Arab population in the nation. The Islamic Medical Student Association of WSUSOM partners with the HUDA Clinic, a Detroit free clinic serving the uninsured patients from Arabic-speaking nations.

Methods: To assess the utility of the language sessions with regards to communicating in non-English speaking clinics, medical students attending the language sessions were sent a survey assessing their experience in the session. Results from the survey were coded on a scale from 1-5, with a score of 5 representing Strongly Agree and 1 representing Strongly Disagree. Students were also asked to rank six phrases in the order which they have found most useful in a clinical setting.

Results: Pilot data shows that 89.2% of respondents (n=15, mean age= 24 years, 66.6% female, 26.6% Caucasian) strongly agreed that the language sessions provided a foundation for communicating with patients at their respective clinics. 84.6% of the sample strongly agreed that all questions regarding pronunciation and grammar were answered at the session and that they have learned at least one word that can be applied in a clinical setting. Students found “How are you?” to be the most useful phrase in a clinical setting.

Conclusions: These results will guide our language sessions in order to provide students with optimal communication skills when interacting with non-English speaking patients.

30. The Long-Term Impact of a Community-Based Medical School on the Local, Regional, and State Physician Workforce

Julie Phillips, Michigan State University College of Human Medicine

Background: Michigan State University College of Human Medicine (MSU-CHM) has immersed students in diverse communities across Michigan for their clinical education since its founding. As U.S. medical schools expand, many are adopting similar community-based models, often with the goals of graduating more students who will practice primary care, serve the local community, and care for the underserved. However, because the practice patterns of graduates cannot be assessed until years after institution-community partnerships have been established, newer institutions may be challenged to convince local stakeholders to invest in undergraduate medical education.

We retrospectively evaluated the impact of MSU-CHM on the physician workforce in the six communities in which clinical campuses were initially established. As other institutions are expanding their reach by developing new campuses, this evaluation can help “hosting” communities consider the potential impact of regional campuses on the local physician workforce.

Methods: American Medical Association (AMA) Masterfile data from 2011 was obtained for all MSU-CHM graduates from 1978-2006 and cross-matched with College demographic data. Practice locations of recent graduates were cross-checked with internet searches. Physicians who were retired, inactive, or deceased, or whose practice locations could not be confirmed, were excluded. 3088 graduates were analyzed in total. Using Geographic Information Systems software, practice locations were geocoded and joined to Rural-Urban Commuting Area Code (RUCA) 2006 data by ZIP Code, and to the 2011 Health Professional Shortage Area (HPSA) shape file. Fishers’ exact tests were used to compare the proportion of graduates

from each campus practicing in primary care, within 50 miles of their campus, in HPSAs or rural communities, and in Michigan, to a composite of all other campuses.

Results: 20 percent of all graduates practiced within 50 miles of their medical school community. The practice patterns of graduates of each community were unique. For example, Marquette graduates were more likely to practice primary care, in rural communities, and in the Upper Peninsula. Flint graduates were the most likely to practice in Detroit and the least likely to practice in rural communities. When all graduates were combined, their practice locations reflected the population density of Michigan.

Conclusions: Students' long-term practice choices may reflect their training communities in patient populations and specialty choice patterns. Thus, the communities where medical schools are established or expanded may have significant implications for the future physician workforce. This analysis demonstrates the value of a dispersed campus model in developing the local, regional, and state-wide physician workforce.

31. Exploring the Impact of Debt and Potential Income on Second Year Medical Students' Career Planning

Julie Phillips, Michigan State University College of Human Medicine

Background: Both high educational debt and the growing income gap between primary care physicians and specialists appear to deter some students from pursuing primary care careers. However, little is understood about why some students are influenced more than others.

Methods: Approximately 200 second year medical students at a community-based medical school were asked to respond to an open-ended essay question about their debt, their possible future income, and how this shapes their future career plans. Completion of the essay was one way for students to fulfill a course requirement. Essays were analyzed using an immersion and crystallization approach, followed by detailed coding by a team of four researchers.

Results: 138 students responded to the essay question; of these, two opted out of study participation, and two were excluded, leaving 134 essays for analysis. The researchers had sufficient data to achieve saturation. Students described debt and income as having a range of influences on their careers. Many did not believe that a primary care career was feasible because of their educational debt. A few students, who would otherwise consider primary care careers, described guilt about their plans to specialize. Students who planned primary care careers often anticipated financial sacrifice and struggle. Other students expressed the view that all physicians, including primary care physicians, make sufficient income to achieve their wants and needs.

Students also described a range of other factors influencing their career choice decisions, including altruism, prestige, and security. They linked many of these parallel influences to financial issues. Some students expressed anxiety about perceived uncertainty and change within the U.S. health care system. Specialization was generally described as the more secure path to financial stability. Many students related their attitudes toward financial issues to their underlying values about what it means to be a physician.

Conclusions: Financial issues motivate many students to choose specialty careers. How students are influenced depends on both their financial perspectives and their professional ideology. Physician educators can use the study to make appropriate curricular adjustments in debt management education and career advising strategies. This may include addressing students' underlying fears and insecurities about their debt; exploring the complex relationships between financial compensation, prestige, altruism, and security in the hidden curriculum of medical education; helping students articulate their own financial values; and empowering students to make informed specialty choices based upon goodness of fit with these values, among other considerations.

31. Changes in Student Views of the Ideal Physician during the First Year of Medical School

Ya-Wen Cheng, University of Missouri

Background: Many studies have found that the demands and tacit emphasis on technical knowledge in medical education conflict with the idealism that students bring with them to medical school. While some are able to maintain their values, others revise their conceptualization of their ideal physician in order to

assuage this internal conflict (Coulehan & Williams, 2001). This study examines 1) whether medical students' view of the kind of physician they want to become changes during their first year, and 2) the factors influencing any changes.

Methods: During orientation in August 2013, first year medical students wrote stories about a person/experience that inspired them to consider a career in medicine. Using themes from the stories, the class created 12 statements to describe the type of physicians they wish to become. Then in January and June, each student selected the two statements he/she found particularly important and developed plans to improve in these areas. Students were asked to connect their learning in the curriculum to the statements and how their views had changed since orientation. A total of 97 students completed all three activities. In this qualitative study, we used open coding (Corbin & Strauss, 1990) approach to guide our analysis. All the data were separately coded by two researchers to avoid bias and increase interrater reliability.

Results: As a class, students' focus changed from more general statements (e.g. endeavor to do all within their abilities) to more specific focus on patient-centered care (e.g. build deep and meaningful relationships with patients). Although many students chose different statements as important from January to June, only 51% thought their vision had changed since orientation. Within the group who changed views, 69% indicated an expanded/deepened understanding of their ideal physician. About 31% indicated more empathy after patient encounters during their first year. When asked what situation prompted the change, the first year of medical education (22.7%) and learning and collaborating with medical community (18.7%) were most commonly mentioned.

Conclusions: More students' focused on relationship-related statements at the end of their first year. Students were able to connect what they were learning in the curriculum to their personal goals. Our patient-based learning curriculum emphasizes patient-centered care and early patient contact which probably contributed to the shift. Students will have additional opportunities to reflect back to their inspiration to choose service in medicine throughout the remaining years of education. An independent measure of patient-centeredness would strengthen our findings.

32. Structure and objectives of longitudinal patient experiences in US medical schools

Tom Jun, Harvard Medical School

Background: Longitudinal relationships with patients are commonplace in almost all forms of clinical practice, yet medical students have limited opportunities to develop such relationships with patients during their training. Medical schools are increasingly adopting models such as the longitudinal integrated clerkship (LIC) to address this deficiency. We conducted a systematic search for longitudinal patient experiences offered by US medical schools and characterized the programs by length of time, program structure, and program goals.

Methods: Longitudinal programs were identified through keyword searches on the Google search engine and on the websites of all 137 LCME-accredited US medical schools (not including Puerto Rico). Inclusion criteria for programs identified in this phase were: length longer than 6 months, involvement of undergraduate medical students, stated emphasis on longitudinal patient contact and/or continuity of care; and reasonable probability of students interacting with patients more than once over the period of the program. Representatives for each program were also contacted for additional information and verification.

Results: We identified 98 longitudinal programs in 69 schools. No longitudinal program was identified in 68 (50%). Almost all the programs we identified were offered as part of the schools' curricula (97%). However, less than half the programs (46%) were designed to be an obligatory part of the curriculum for all students. One-year programs were the most common, numbering 47. There were 39 programs lasting more than 1 year, including 14 programs lasting for 4 years. The most common format for longitudinal programs was the clinic attachment (50%), followed by LICs (27%). Stated program goals included: primary Care/ family medicine (16%), relationships (12%), history and physical skills (9%), rural health (8%), and professionalism (7%).

Conclusions: The goals of longitudinal programs are quite varied and can include: developing clinical skills and knowledge, exposure to specific specialty areas (e.g. primary care, rural health, geriatrics), emphasizing the patient experience of illness and building qualities such as professionalism and ethics.

Accordingly, length and structure of programs also show significant variability. LICs are a notably homogenous and common program design within the landscape of longitudinal programs. It is not clear what program design is best suited to each of the various goals laid out by the longitudinal programs identified here. Our future efforts will be directed towards finding associations between stated goals and program designs.

33. Critical Evaluation of an Undergraduate Medical Education Community Health Education Project, *Lorraine Wallace, The Ohio State University*

Background: During the 2012-2013 academic year, The Ohio State University College of Medicine (OSUCOM) adopted a new curriculum (Lead.Serve.Inspire [LSI]). A Community Health Education (CHE) project was a standard component of the LSI curriculum for first-year (M1) students. The purpose of this study was to conduct an interactive focus group with first-year students (M1s) to elicit detailed feedback regarding their (1) CHE project experiences and (2) recommendations for CHE project improvement.

Methods: The CHE project team worked with two consultants to conduct a focus group with current M1s. The two consultants co-led a two-hour session with 31 M1s who volunteered to participate. First, students were asked to break into small groups and take notes regarding their overall CHE project experiences. Secondly, as a large group, students were asked to share their comments generated in small groups. Thirdly, students were asked to suggest recommendations for CHE project improvement. The large session was audio-recorded and transcribed in its entirety. After an iterative coding and analytic process, major themes and representative quotes were identified.

Results: Four main themes emerged, including (1) support needed to complete the CHE project, (2) perception of value of the CHE project, (3) interactions with CHE project sites, and (4) CHE project improvement.

Conclusions: While students faced challenges in implementing their projects, most saw the overall educational value of the project. Findings provided project team leaders with feedback that should be considered by institutions involved in CHE planning.

34. Perceived Value of Influenza Vaccination In Light of Provider Recommendation for and Uptake of the Vaccine.

Maurice Kavanagh, OUWB

Background: The ingrained value of influenza vaccination to health care workers is an important consideration given their influence on vaccine uptake in both their patients and the general population. Prior studies have demonstrated both the value of health care provider recommendation and personal buy in by the health care provider. While training in the value of vaccine uptake can positively influence new learner attitudes towards influenza vaccination, questions remain about their ingrained attitudes influencing their acceptance of the value of the vaccine.

Objectives: 1) Determine the effect of provider recommendation on influenza vaccination rates among entering medical and nursing students, and 2) Compare the attitudes of previously vaccinated versus non-vaccinated students towards influenza vaccination.

Methods: First year medical and nursing students over a four year period were surveyed at the beginning of their first semester of clinical instruction on their influenza vaccination practices and attitudes. Information on provider recommendation, vaccination status, and attitudes regarding influenza vaccination was collected using anonymous, 18-item online questionnaires. Items included attitudes on perceived risk to self and patients, and desire to recommend influenza vaccination to family and friends. Analysis of variance (ANOVA) procedures were used to explore the relationships.

Results: A total of 403 out of 505 students (79.8%), 300 medical and 103 nursing completed the survey. Of the 403 participants, 220 (54.6%) had received the flu vaccine within the last year. Of the 220 who had received the vaccine, 194 (88.2%) had received recommendation to obtain the vaccine from their healthcare provider. Significant associations ($p < .01$) were observed between receiving the vaccination and recommending it to family and friends, importance of the vaccine for personal protection (2 items), and the importance of vaccination for health care workers. Significant associations were also observed

between recommendation from their health care provider and the importance of vaccination for health care workers ($p < .01$), importance of the vaccine for personal protection ($p < .01$), and recommending it to family and friends ($p < .05$). Crossing recommendation with receiving did not show significant additive improvements in attitudes.

Conclusions: Our research shows that both recommendations for and receipt of the flu shot were associated with its increased perceived value and by association, recommendation to family and friends. This suggests that combining recommendation with personal uptake of influenza vaccine may improve compliance in the general population.

35. Characteristics and Career Intentions of Joint MD-MPH Program Graduates: A National Cohort Study, *Dorothy Andriole, Washington University School of Medicine*

Background: Although joint MD-MPH programs are offered at many U.S. medical schools, national cohorts of MDMPH program graduates have not been described. Thus, we conducted a national, retrospective cohort study to compare characteristics and career plans of MD-MPH program graduates with those of MD-degree program graduates.

Methods: With de-identified data provided by the Association of American Medical Colleges (AAMC), we constructed a database of individualized records for all U.S. medical-school matriculants in 2003-04 through 2006-07 who had graduated by 2012 with MD or MD-MPH degrees, and had completed the AAMC Pre-Medical College Admission Test Questionnaire (PMQ) and the AAMC Graduation Questionnaire (GQ). We examined a set of demographic variables, (gender [women vs. men] and race/ethnicity [categorized as under-represented in medicine (URM) , including Black, Hispanic and Native American/Alaska Native), Asian/Pacific Islander, other/multiple races/unknown vs. white]); PMQ attitudinal variables (most interesting area of medicine [public health, biomedical research vs. patient management]; importance of each of altruism and prestige in one's decision to study medicine [1 = not at all important to 4 = very important]); and GQ career-plan variables (career-setting preference ["full-time university faculty", "other", "undecided", and "missing response" vs. "full-time clinical, non-academic practice"]; specialty choice ["primary care specialties", "obstetrics/ gynecology", "surgery", "emergency medicine", "radiology" and "undecided/no choice" and "no response" vs. "all other specialty choices"]) to identify independent predictors of MD-MPH graduation, compared to MD-graduation in a multivariable logistic regression model. Adjusted odds ratios (OR) and 95% confidence intervals (CI) are reported.

Results: Our sample included 47,975 (47,317 MD [98.6%]; 658 [1.4%] MD-MPH) medical-school graduates. Graduates who were women (OR: 1.21, CI:1.03-1.43) , of URM race/ethnicity (OR: 1.22, CI: 1.00-1.51) , who identified public health as the most interesting aspect of medicine (OR: 3.10, CI: 2.58-3.72), who chose primary care specialties (OR: 1.99, CI: 1.50 -2.63) and with career-setting preferences of "full-time faculty" (OR: 3.34, CI: 2.53- 4.41) or "other" (OR: 3.90; CI: 2.86-5.31) were more likely , whereas graduates who had reported greater importance of prestige a as reason to study medicine were less likely (OR: 0.73, CI: 0.65-0.82) to be MD-MPH graduates.

Conclusions: Compared to MD-degree graduates, MD-MPH graduates placed greater importance on altruism in studying medicine, demonstrated long-standing interest in public health aspects of medicine and were more likely to plan primary-care careers, suggesting that MD-MPH graduates may be particularly well-prepared to address many health-care needs of a diverse U.S. population.

36. Characteristics of feedback given in a direct observation exercise used in the teaching of the neurologic physical examination to third year medical students

Jacquelyne Cios, The Ohio State University

Background: Feedback has been considered an integral part of effective practice in medical education. It has been observed that feedback which is improperly given can result in unwanted consequences at times far into the trainee's career. A recent review of assessment tools in medical education demonstrated that structured direct observation activities play an important role in student medical education. For this reason, the Expert Educator program of the Ohio State University College of Medicine curriculum has implemented structured direct observation of students performing the physical exam. In the third year of the curriculum, this is built in to the Neurology clerkship and applied to the teaching of the neurologic physical

examination. Challenges face the medical educator regarding identification of how much feedback to give and when to offer feedback, particularly during the teaching of physical examination skills in direct observation activities using real and standardized patients. In addition, the educator is faced with the choice of type of feedback to give in terms of content and delivery style. Feedback which successfully results in educational benefit has been identified to focus on observable behaviors rather than on the personality or other attributes of the trainee.⁴ In addition, Hewson et al. studied a range of clinician educators from various disciplines and assessed which feedback techniques were successful, producing a list of nine different recommended aspects of effective feedback or educator behaviors (Fig. 1).

Fig. 1

- Teacher establishes appropriate interpersonal climate
- Feedback given in appropriate location
- Feedback given regarding mutual teacher- learner goals
- Teacher elicits learner's thoughts/ feelings
- Reflection on behavior is elicited
- Feedback is nonjudgmental
- Right amount of feedback is given
- Feedback is specific
- Ideas for improvement are suggested

Aim: Given this framework, our purpose is to characterize the types of feedback given by three different clinician educators in the Neurology department during the third year medical student clerkship direct observation activity.

Methods: Sixty consecutive students will be recruited for this pilot observational study. Each medical student will demonstrate the neurologic physical examination techniques with their assigned educator. A second student who is not involved in the teaching exercise will serve as the recorder of the types of feedback given.

Outcomes measures: Two forms will be generated and used for each observation exercise. One form will be a template on which to track the types of feedback given, specified according to nine categories as modeled in Fig. 1. The second form will be a satisfaction survey regarding the quality of education provided in the direct observation exercise, and will be completed by both the learner and the educator. In addition, the number of feedback items offered, the timing and location of this feedback will also be recorded. Descriptive summary statistics will be calculated for all outcome measures. The frequency of occurrence of feedback categories and the number of interventions offered during as opposed to after the examination will be reported. Nonparametric statistical comparisons and linear regression techniques will be used to draw conclusions regarding which of the techniques resulted in both learner and educator satisfaction.

Potential significance: We anticipate that the data generated by this observational project will help define the scope of our teaching practice and illustrate multiple specific methods of giving successful feedback. We hope to identify trends regarding characteristics of feedback that are well-received by both learner and educator and thus build upon the current understanding of the aspects of successful feedback. Knowing this will help us to design future studies, using randomized controlled study designs, testing specific interventions.

Innovations in Medical Education Posters

37. Out of the Classroom and Into the Community: Teaching Medical Students about Health Literacy through a Collaboration with Head Start

Emily Milford, University of Missouri School of Medicine

Objective/Purpose: To introduce medical students to the topic of health literacy (HL) through a community-based service learning experience. Need for Innovation/Practice: HL is a crucial element in

training future physicians because poor health literacy has been shown to be a determinant of poor health outcomes. While over 70% of medical schools reported teaching about HL in their curriculum, the median time spent on this topic was 3 hours. Students do not feel this is adequate training for developing the skills required to be effective practitioners. Medical schools need to continue to improve their HL curricula.

Methods, Materials and Resources used: Eat Healthy, Stay Active! (EHSA) is a low-literacy health promotion program that addresses pediatric obesity prevention in the Head Start community. The program consists of staff training, parent training, and a coordinated classroom curriculum led by staff. Parents' HL is measured by administering the Newest Vital Sign (NVS), a validated tool to measure HL. All 1st and 2nd year medical students at MU SOM were eligible to submit a competitive application to participate as partners in the EHSA program. After acceptance, students (n=12) attended a series of didactics, visited their assigned Head Start site, participated in an EHSA activity in the Head Start classroom, and attended parent trainings where they administered the NVS, measured parents' BMI, and helped parents with goal setting through motivational interviewing techniques. Throughout the five-month program, medical students were asked to complete a set of open-ended journal questions about the project. This allowed students to self-reflect throughout the experience. Medical students were also given a pre- and post-program survey.

Outcomes : The pre- and post- survey consisted of fourteen 5-point Likert scale questions designed to measure attitudes, knowledge, skills, and behaviors regarding HL. Students' attitudes (1= least and 5= most important) about the importance of HL were ranked as high both pre- and post-program, with a pre mean= 4.55 and post mean= 4.83. However, students reported statistically significant increases in knowledge (1= least and 5= most knowledgeable; pre mean= 3.29 and post mean= 4.33) and confidence (1= strongly disagree and 5= strongly agree; pre mean= 3.81 and post mean= 4.11) related to health literacy techniques, strategies, and resources after participation. Furthermore, journal entries were categorized qualitatively and demonstrated the medical students' new insights, growth, and development throughout the project.

Strengths and Areas for Improvement: All participants were present for 100% of the activities. There was no cost to the medical school. This opportunity allowed medical students to practice concepts learned in the classroom in a low HL setting. Students gained confidence in their skills as well as a better understanding of the needs of their community. The partnership with Head Start was equally beneficial to the community because it enriched the parent education and training and helped to break down barriers between patients and providers. The program continues to grow; this year 22 students (10% of eligible students) are participating in the program. Limitations in interpreting the results include the possibility that some of the changes in the participants' skills and knowledge were due to the MU SOM traditional HL curriculum.

Feasibility of Program Maintenance/Transferability: Medical Schools would need to have a local Head Start or other community agency ready to implement EHSA in their community. Medical schools could use this model to develop successful collaborations with different types of community partners. The EHSA curriculum is provided by UCLA at no cost. The MU SOM and Central Missouri Head Start would welcome the opportunity to share their experience and materials to use as a template for developing a similar curriculum. Volunteer faculty support to serve as advisors to the program is essential.

38. Innovations in Simulation: Career Counseling and the Mock Interview Experience During the Fourth Year

Allison Martin, University of Missouri School of Medicine

Objective/Purpose: Creating career counseling resources around writing an effective personal statement, presenting a concise curriculum vitae, and handling simulated residency interviews for students entering their M4 year has proven to be a very helpful integrated model to assist students with feeling prepared for interview season.

Need for Innovation/Practice: With increasing class sizes and stagnant growth in graduate medical education positions the residency match process becomes more competitive each year putting students who are unprepared for interview day at a distinct disadvantage. The results of the 2014 NMRP Program Director survey for all specialties show that 93% of programs rate interactions with faculty during interview and interpersonal skills as the two top factors when developing their rank order list. Integrating counseling activities around personal statement and curriculum vitae development alongside simulated interview

practice advances preparation for the high stakes interview day.

Methods, Materials and Resources used: Collaboration between student services, admissions, a surgical educator, and the clinical simulation center resulted in a new simulation event: "M4 Mock Residency Interviews." Students provided their PS and CV for an optional critique by career counseling staff. Standardized interviewers were recruited from the healthcare system for their professionalism, interviewing experience, and desire to volunteer being trained to simulate different personas to help students adapt to different interviewing styles. Interviewers had mock questions as well as highlighted comments on CV and PS to promote an individualized experience. Discipline specific questions targeted residency interests. Students participated in two simulated interviews. Trained observers watched live video feed and provided immediate feedback on a standardized form and in person. Recordings were made available to students for review.

Outcomes : In 2013, thirty-four (34) out of ninety-eight (98) students voluntarily participated in the simulated interview experience. Twenty-nine (29) of thirty-four (34) students completed the post event survey:

- 100% thought the exercise was very helpful or helpful
- 96.5% thought the exercise seemed real
- 100% felt better prepared for residency interviews

2014 data is being collected and will be incorporated into the poster. Several questions regarding the value of having PS and CV critiqued as a part of the process will be added. We will also provide data on how the interviewers viewed the exercise for both years.

Strengths and Areas for Improvement: Career counseling services that combine a simulated mock interview experience with PS and CV development provides an opportunity for students to practice interviewing while reflecting on their accomplishments and motivation for specialty selection. Multiple observers offer immediate feedback regarding performance. Students find this to be valuable in preparing for residency interviews.

Areas of Improvement: 1. Offer this experience over three (3) months (August-October) rather than two (2) months (September-October) making it more accessible for those going through the early match and for those on away rotations. 2. Critiques of the PS and CV shall occur several weeks prior to the interview and should be automatic rather than optional.

Feasibility of Program Maintenance/Transferability: Management of scheduling students, interviewers, observers and video production is highly dependent on collaboration with our simulation center staff and resources. Career counseling staff must be able to offer their services in critiquing PSs and CVs. This opportunity can be replicated at institutions with dedicated career counseling staff and simulation centers. The key is to foster collaborative working relationships across departments.

39. Pilot Program Results of the LGBT Cultural & Clinical Competency Certificate Program

Gary Beck, University of Nebraska Medical Center

Objective/Purpose: Purpose: To develop an educational program addressing LGBT content with little disruption to students' schedules.

Need for Innovation/Practice: Need for Innovation: Time allocated to lesbian, gay, bisexual, and transgender (LGBT) topics in health professions education is minimal. A third of medical students rate LGBT content in pre-clinical instruction as fair; survey findings indicate our students want LGBT topics integrated into the curriculum. With tight schedules in all schools, a novel approach to address this gap in knowledge and skills was initiated.

Methods, Materials and Resources used: Methods: An 8-month, extra-curricular certificate program was developed and organized around the Fenway Institute topics (Philadelphia, PA: American College of Physicians, 2007). Learning modules were completed using the university's course management software. Two tracks of this program were developed: Basic Knowledge and Advanced Skills. Students participating in the Basic Knowledge track completed weekly assignments, responded to discussion topics on a faculty-moderated discussion board, and responded to other learner's postings. The Advanced Skills track involved completion of online modules as well as attendance at monthly, 2-hour seminars, which involved

standardized patient interactions, panel discussions, and multimedia presentations.

Outcomes : Outcomes: Twenty-two students participated in the Basic Knowledge program (19 medical, 3 public health); 11 of those participated in the Advanced Skills program (8 medical, 3 public health). Students evaluated the program using a scale of 1=Very Poor to 5=Very Good. All of the topics were highly rated for both tracks. Suggestions from written comments for the Basic Knowledge modules included eliminating redundancies and to focus more on a variety of subtopics. Suggestions from the Advanced Skills sessions included increasing public health perspectives and going to sites to learn about community resources.

Strengths and Areas for Improvement: Conclusions: Using asynchronous teaching methods, students from different health professions can learn about LGBT health topics. Based on this pilot group, we plan to invite nursing, pharmacy, and allied health students to participate in academic year 2014/2015. Additionally, online modules will be reviewed to eliminate redundancies and improve the structure of the discussion board format.

Feasibility of Program Maintenance/Transferability: Feasibility: Maintenance of this program is low cost. Time commitments are less now that modules have been developed. Moderating the discussion boards and the 2-hour sessions are the greatest time commitments.

40. A Student Led Research Seminar Series

Daniel London, Cleveland Clinic Lerner College of Medicine of Case Western Reserve University

Objective/Purpose: To create a student-driven and student-led peer-mentoring program for medical research.

Need for Innovation/Practice: The Cleveland Clinic Lerner College of Medicine is a five-year medical school designed to train physician-investigators. Training in clinical and basic science research is integrated throughout the curriculum, with a protected year of full-time research, and significant exposure to potential mentors. However, the curriculum lacks a formal avenue for students from years 1-5 to exchange research project ideas and experiences, and provide feedback to each other. Students voiced a need for longitudinal development of research ideas and intra/inter-class mentoring.

Methods, Materials and Resources used: We created a monthly, student-led seminar series to provide an avenue for students to share research ideas and logistical knowledge of conducting a yearlong research project. Upperclassmen (years 3-5) that completed their thesis project presented 15 minute talks on the salient aspects of their research, while reflecting on the challenges and lessons learned. Additionally, panels of upperclassmen presented general research topics based on their experiences such as 'How to choose a mentor', 'How to manage several projects at once', and 'How to apply for funding opportunities.' The goal of the seminars was to leverage the experiential knowledge of upperclassmen that would be otherwise lost.

Outcomes : As a pilot project, we collected qualitative and quantitative feedback to assess the seminars' perceived usefulness. As anticipated, underclassmen (Years 1-2) attended the sessions in a greater proportion than upperclassmen. Importantly, there were participants across all classes and one-third of students in the 1st year-class attended the sessions, which were non-mandatory. Short-answer responses were coded based on overarching themes identified by two of the organizing students and analyzed.

Strengths and Areas for Improvement: Students most commonly said the strengths of the sessions were learning tips from peers on preparation/logistics/collaboration, setting expectations, and managing multiple projects. As sessions were student-led a need for a stronger moderator was noted, as well as for some speakers to reduce their focus on the content of their research projects.

Feasibility of Program Maintenance/Transferability: This pilot project of a student-led seminar series was simple to organize and run, and it served as an effective approach to leverage the experiential knowledge of upperclassmen that would be otherwise be lost. Beyond strengthening our colleagues' research efforts, this series can serve as a model for the integration of student mentorship into research and other aspects of medical school curricula.

41. A Script for Success: Using Scripted Educational Materials for Consistent Quality in Small Group Sessions

Gary Cohen, *Medical College of Wisconsin*

Objective/Purpose: Using scripts for faculty, design an educational program that would allow consistent, quality teaching of clinical exam and clinical reasoning skills to preclinical medical students.

Need for Innovation/Practice: As medical schools move toward integration of basic and clinical sciences, more clinical faculty are needed to teach preclinical medical students. Faculty must focus and restrict their large clinical knowledge to fit the needs of early learners.

Methods, Materials and Resources used: The Bench to Bedside course at the Medical College of Wisconsin includes a series of small group sessions that allow a small number of students to interact with one faculty member to learn physical exam (Clinical Skills Workshop) and clinical reasoning skills (Clinical Reasoning Exercises). Individual teaching sessions were designed with a script to assure the faculty covered the same material. Slide sets were created that provided tables, charts and other information that linked the basic science material the students had covered in other preclinical classes as well as the skills being taught in the Bench to Bedside session. Student performance in each session was assessed with either writing exercises or multiple choice exams. Student and faculty feedback was solicited at the end of the course. A 5-point Likert scale was used to evaluate feedback by students and faculty.

Outcomes : Students performed extremely well on their objective assessments with a mean score on all assessments above 90%. Student surveys reported satisfaction with the teaching format and assessed faculty effectiveness at a mean of 4.1/5 (5=best). Faculty demonstrated their satisfaction with 90% reporting an increase in their confidence teaching the content presented in the scripted material. Eighty-five percent (85%) of faculty indicated the students were more engaged in these sessions compared to other teaching venues they previously experienced, the sessions were a better use of their teaching time compared to other educational responsibilities (80% of respondents), and 83% of faculty reported being more likely to volunteer their time for these sessions in the future due to the structure and preparatory material.

Strengths and Areas for Improvement:

Strengths include:

1. Consistency of material taught in each small group session
2. Less preparatory time for busy clinical faculty
3. Ability of clinical faculty to teach subject material that is not part of their specialty
4. The ability to revise the script to follow subjects taught in the basic science classes

Areas of Improvement

1. Some faculty feel too confined by the script. Need to allow for more "improvisation" but still assure core material taught

Feasibility of Program Maintenance/Transferability: Scripting for Bench to Bedside Clinical Skills Workshops and Clinical Reasoning Exercises have gone through 5 semesters. The initial scripting requires a significant time commitment, however once completed only revisions are needed. A template for the script helps reduce the time needed to produce a session making it feasible for other classes to incorporate scripting in their curriculum.

42. Curriculum to Impact Early Medical Student Attitudes and Skills Related to Teamwork and Quality, Chheda, Shobhina, *University of Wisconsin - School of Medicine and Public Health*, Davis, James, *University of Wisconsin - School of Medicine and Public Health*

Objective/Purpose: A priority in US healthcare is the development of effective care delivery teams linked to systems for improving quality of care. New LCME competencies rightly necessitate that students gain experience in working with interprofessional teams and quality improvement (QI).

Need for Innovation/Practice: Currently our medical students have minimal education related to these domains. To address this need we are piloting an experiential curriculum to introduce this content to 1st and 2nd year medical students with the goal of developing students that are more effective team members

that embrace QI. First semester implementation and assessment data will be disseminated.

Methods, Materials and Resources used: Our curriculum imbeds sequential curricular modules regarding healthcare teams and QI into a required longitudinal ambulatory clinical experience for 1st and 2nd year students. First semester modules orient students to clinic systems from interprofessional team member and patient perspectives and show how clinic leadership coordinates teams. Two ways of implementing these modules were explored: a prescriptive format (PF) and a self-directed format (SDF). Students were randomly assigned to the PF (n=22), SDF (N=20), or the traditional curriculum (TC) (N=135). All M1 students and a comparison cohort of M2 students complete baseline and end-of-semester assessments.

Outcomes : All assessments use 5-point Likert scales where students rate the importance of 6 different physician roles (including “communicating with team members” and “systems improvement within a clinical setting”), and self-reported skill in 12 activities (including “analyzing the clinic as a system” and “contributing to a quality improvement project”,). Assessments include 5 questions about how connected students feel to various staff at the clinic, and 4 questions about how comfortable they feel raising or addressing quality improvement issues within the clinic. At baseline there are no differences in M1 students assigned to PF, SDF and TC conditions and we will compare outcomes between groups and to historical controls at the end of this semester.

Strengths and Areas for Improvement: Our curricular modules allow for implementation in varying ambulatory clinical settings and can be imbedded within a variety of existing longitudinal clinical experiences. Assessing the impact of the curriculum as well as comparing the implementation formats will direct future areas for improvement and innovation.

Feasibility of Program Maintenance/Transferability: The modular aspect of the curriculum will allow for flexibility so that other institutions can determine best fit based on their existing curriculum in the ambulatory setting. Our comparison of the effectiveness of a PF to a SDF, will inform what resources will be needed to expand the curriculum to additional students.

43. Determining Medical Students Perceptions of Perpetrators and Victims of Sexual Abuse

Danielle Rush, OUWB

Objective/Purpose:

This study explored students’ perceptions regarding perpetrators and victims of sexual abuse before and after an educational intervention presented by a forensic expert from the Haven Clinic*. The study was undertaken to determine how introducing a session into the Reproductive Organs System Course might influence student perceptions of these potential patients.

Need for Innovation/Practice:

Despite a high incidence of sexual abuse cases (Table 1), formal preparation of medical students to address these cases appears to be lacking. Both institutional and social barriers must be addressed in the medical school curriculum to improve the standard of medical care and satisfy the needs of both victims of sexual abuse and the healthcare professionals that treat them.

Methods, Materials and Resources used:

Following an initial survey to assess students’ knowledge and beliefs, a forensic expert delivered a session to the M2 students about victims of sexual abuse. The same survey was re-administered post-session. Data was analyzed to determine how individual responses changed between surveys. Students’ responses were compared to those chosen by the forensic expert and the percentage of students’ agreement with these choices before and after the session was determined.

The pre-session survey was completed by 54 of the 74 M2 students; 42 students completed the post-session survey. Only 36 students completed both surveys. Initial analysis of student responses suggest that many of their initial perceptions were built on myths and misperceptions (based on the divergence of student choices from choices provided by the forensic expert).

Outcomes: Thorough analyses revealed not only the perceptions that were most common, but also suggested that the information session helped to dispel some misperceptions For the True vs. False section of the survey, the questions that had the greatest division between True and False initially, also

had the greatest change after the information session.

Strengths and Areas for Improvement: As this is a preliminary study much more research needs to be done to draw comprehensive conclusions. The aim of this study is to create the momentum needed to redesign the medical curriculum with a focus on intimate and at times uncomfortable physician-patient interactions.

Feasibility of Program Maintenance/Transferability: The success of the initial survey has prompted students in the M1 class to continue to improve upon the survey and informational session. In the next one to two years the program will be intertwined with an Art of Practice and Medicine course.

44. Nurturing Cultural Competence in the Medical School Community: An Extracurricular Education Series for Students, Faculty and Staff

Dena Abuelroos, OUWB

Objective/Purpose: Fostering diversity and cross-cultural capacity in medical students is vital, especially in today's diverse society. Exposure and experience are imperative in order to enrich students understanding and appreciation of their heterogeneous environment.

Need for Innovation/Practice: Medical schools must produce culturally competent, compassionate physicians who can recognize and care for patients from diverse backgrounds including race, ethnicity, socioeconomic status, age, gender, religion and literacy level. It is just as important for faculty and staff to support students and nurture this cultural awareness.

Methods, Materials and Resources used: A unique extracurricular programming series was developed spanning the first two years of undergraduate medical education to raise awareness of local health care disparities and provide community involvement opportunities for students, faculty and staff. This series was connected to the M1 and M2 curriculum and was also linked to national health observances or related university occasions. The events, in the form of a dialogue, focused on gestational diabetes, heart health, faith in medicine, prostate cancer health, and adolescent sexual health.

Outcomes : A program evaluation survey was sent out after each session to the participants to reflect on how they will apply the knowledge in their practice as future physicians. Survey results indicated positive feedback from participants. Students commented on the relevancy and enlightening experience of the dialogue.

Strengths and Areas for Improvement: Most medical school curricula have separate programs or weave elements of diversity and cultural competence into the pre-clerkship or clerkship years as outlined by national standards. Dialogues act as a medium to recognize diversity issues and health care disparities in the clinic and surrounding community. In order to evaluate its efficacy a formal study should be conducted to quantify the data.

Feasibility of Program Maintenance/Transferability: This successful series can be adapted to any curriculum to help nurture cultural competence for students, faculty and staff of any medical school community.

45. The Utilization of Telehealth/Telemedicine as a Tool in Interprofessional Medical Education and Collaborative Care.

Lisa Bell, US Department of Veterans Affairs

Objective/Purpose: Health care providers of the 21st century must be trained in the areas of interprofessional collaborative efforts, curricular education, and by new ways of delivering patient care.

Need for Innovation/Practice: Telehealth affords healthcare access opportunities, whereas otherwise limited or inaccessible healthcare negatively impacts healthcare accessibility. Telehealth/Telemedicine (Virtual Health Care) curriculum is a component of the VA Transforming Outpatient Care – Center for Excellence in Primary Care Education program, which aims to integrate MD Resident, NP Student/Resident, and Psychology Fellows learning in primary care. Learners engage in a robust curriculum which emphasizes the role of emerging technologies in non-face to face care of the patient. Telehealth changes the location where health care services are routinely provided. The value VA derives

from telehealth is not in implementing telehealth technologies alone, but how VA uses health informatics, disease management and telehealth technologies to target care/case management thereby facilitating access to care and improving the health of veterans (<http://www.telehealth.va.gov/>).

Methods, Materials and Resources used: Synchronous, real-time or Clinical Video Telehealth requires the presence of both parties at the same time and a communication link between them that allows a real-time interaction to take place. Asynchronous, or Store-and-Forward Telehealth, involves acquiring medical data (like medical images, bio signals, voice recordings, etc.) and then transmitting this data to a clinician at a convenient time for assessment offline (<http://www.telehealth.va.gov/>). Chronic medical and mental health conditions are monitored through the use of various synchronous and asynchronous Home Telehealth technologies. These technologies allow for daily vital sign data transmission, patient education, and face-to-face video interaction. Interprofessional health care trainees have the opportunity to cross-collaborate and engage with patients and other healthcare providers and specialists, by means of telehealth services and clinical operations. In addition to these cross-collaborative efforts and patient encounters, trainees and clinicians are afforded with the opportunity to learn more about the telehealth services available and how to help patients best utilize these services.

Outcomes : Approximately 38 education sessions occurred between 2012 and 2014. On a Likert Scale with 1 (least useful) and 5 (most useful); feedback reflected averages at a score of 4.5 respectively.

Strengths and Areas for Improvement: Observations during the education sessions, discussions and in clinical practice noted the increased awareness, understanding and utilization of telehealth services available to the patient and provider. Interprofessional learners were able to objectively assess and identify patients as candidates for telehealth services, along with gaps and limitations in the telehealth care structure. Learners express increased interest in expanding and utilizing telehealth care services throughout the healthcare community.

Feasibility of Program Maintenance/Transferability: The feasibility of maintaining telemedicine/telehealth options within the US Department of Veterans affairs has proven sustainable and highly-effective. Transfer of telehealth/telemedicine services and knowledge to other institutions and programs, is feasible. The dissemination of telehealth/telemedicine knowledge to other institutions requires addressing the purpose, uses of, limitations of, financial and economic impacts, and programmatic structures involved in successfully implementing and maintaining effective/efficient telehealth/telemedicine training and patient care programs.

46. Multidisciplinary Ultrasound Leadership Training Initiative (MULTI): Utilizing Near-Peer Teaching to Facilitate Medical Student Education in Ultrasound

Daniel Francescon, Ohio State

Objective/Purpose: Ultrasound training in medical school has traditionally provided its students with some level of generalized technical or academic education during years one (M1) and two (M2), followed by more advanced and specialty-specific opportunities during year four (M4) and beyond. However, little progress has been made in developing students to be leaders in these M4 advanced topics during third year (M3). The Multidisciplinary Ultrasound Leadership Training Initiative (MULTI) is a novel longitudinal curriculum that provides scaffolding to develop third-year students into leaders in their chosen fields as they differentiate their interests during year three. Embodying Aristotle's idea that teaching is the highest form of understanding, MULTI aims to evaluate the leadership development of M3 students as they design and execute specialty-specific ultrasound training sessions for M1 students while using M2 students as their proctors. We believe that this is an effective way through which to prepare M3 students for increased responsibility while simultaneously filling a gap in ultrasound medical education.

Need for Innovation/Practice: With the recent emergence of ultrasound as a dynamic and expanding field in medicine, medical schools have struggled to determine how best to introduce and sustain ultrasound education for their students through all four years of medical school. Furthermore, faculty availability has proven to be a significant obstacle in executing this educational goal. By incorporating near-peer teaching into ultrasound education, MULTI mitigates the need for attending physicians while creating a progressive, longitudinal program through which students interested in ultrasound may advance

during the entirety of their medical school career.

Methods, Materials and Resources used: Methods closely follow those of an internal pilot study conducted last year evaluating the efficacy of ultrasound education in this manner. We are using internal quality data taken both from academic and professional development experienced by the different groups involved in this experience.

Outcomes : We plan to conclude this program by late Winter, 2015, with results ready in early Spring, 2015. We expect results to mimic those seen in an internal pilot study conducted over the past year. Results from this study demonstrated the efficacy of this training in educating learners and increasing their comfort with ultrasound. The effect of this program on M3 students as leaders is yet to be determined, though anecdotal responses suggest favorable results.

Strengths and Areas for Improvement: Strengths of this project include its transferability, limited faculty requirement and expected success as demonstrated through a pilot study conducted last year. An area for improvement is refining the evaluation instrument to determine exactly where the greatest educational gains (i.e., image recognition, acquisition, theory) experienced by the participants lie.

Feasibility of Program Maintenance/Transferability: Given that our educational methods are not field-specific in any way and that the near-peer mentoring technique has been used in many different fields, we expect a high degree of transferability. Additionally, the progressive structure built into this program, with students moving to roles of higher competency and leadership as they progress in medical school, suggests a high degree of maintenance feasibility.

47. Classroom to Community - Medical Student as Educator: The development and implementation of a service-learning campus-community partnership

Rose Wedemeyer, OUWB

Objective/Purpose: Provide medical students with opportunities to develop and practice teaching and communicating with elementary students through collaborative campus-community partnerships.

Need for Innovation/Practice: In today's healthcare environment, teaching is required of all physicians, yet they receive little formal training. Learning to teach and the education of patients directly ties to a number of core competencies: patient-centered care; practice-based learning and improvement; and interpersonal and communication skills. While research shows medical students who have an opportunity to teach show improved communication skills and ability to recognize the patient as the agent of change, few medical schools include teaching as a formal curricular component. We describe the initial component of a curricular thread to develop this core clinical skill in medical students.

Methods, Materials and Resources used: 1. Development of campus-school district partnerships to offer a service learning opportunity for medical students to present a health lesson in elementary schools. Topics from the Michigan Model for Health, a supplemental skills-based curriculum to teach health education, were selected in consultation with the districts. 2. Delivery of an online educational module to prepare first-year medical students for teaching assignments. This included an overview of patient education in healthcare and strategies for teaching school-aged children. Medical students were also taught communication skills through the doctoring course and exposed to healthy-living topics through the prevention course. 3. Evaluation of student experiences through student reflections.

Outcomes : 103 medical students presented at 17 schools. Student reflections revealed an understanding of the importance of communication in their role as future physicians; the importance of translating complex information into simple terms; and the need for building trust and rapport to engage learners as partners. Students also identified behavioral issues with the elementary students and their own lack of skills in managing these situations.

Strengths and Areas for Improvement: Teaching skills are an essential part of the doctor-patient relationship. Through this experience, novice medical students were able to translate their knowledge and skills into an educational experience for elementary students. We plan to further develop this longitudinal curricular thread by expanding curricular content, sequencing the teaching activities to include more diverse populations and clinical contexts, and incorporating formal feedback on medical student performance and communication skills.

Feasibility of Program Maintenance/Transferability: We describe a simple service-learning activity to develop educator skills in medical students through a collaborative campus-community partnership that can be easily replicated and applied to other health-education initiatives.

48. How “INFORMED” are graduating students in obtaining consent?

Audrey Tanksley, University of Chicago Hospitals.

Objective/Purpose: To evaluate graduating medical student ability to obtain informed consent.

Need for Innovation/Practice: AAMC released the Core Entrustable Professional Activities for Entering Residency (CEPAER) as a reference for graduating medical students, and includes obtaining informed consent for tests or procedures as vital skill. There are virtually no assessment methods to define whether graduating students are competent.

Methods, Materials and Resources used: Prior to GME orientation, four specialties (IM, OB/Gyn, Pediatrics, Surgery) of incoming interns participated in an e-module which consisted of pre-survey, webcast with introduction of novel strategy for obtaining informed consent (I.N.F.O.R.M.E.D), posttest, and post-survey. During GME orientation, participants completed an Observed Standardized Clinical Encounter (OSCE) on obtaining informed consent and were evaluated and given feedback by a faculty observer. Objective performance ratings and pre- and post-survey data were used to assess the effectiveness of the curriculum.

Outcomes : Eighty-seven (100%) incoming interns participated (52% internal medicine, 8% OB/Gyn, 28% Pediatrics, and 13% Surgery). While 83% of students report having had prior training in obtaining informed consent, less than half (45%) were satisfied with training, and roughly 1 in 5 reported never obtaining informed consent prior to internship.

Overall the experience was well received with 92% reporting the e-module an effective review of informed consent, 92% being satisfied with their performance and 95% reporting this exercise useful to their career. 97% reported that the OSCE was realistic, and 99% felt the e-module prepared them for the experience. Differences were noted among programs in student ability to introduce themselves, create rapport with the patient and show empathy.

Strengths and Areas for Improvement: The strengths of this innovation include being a multispecialty pilot, which included high fidelity simulation and direct faculty observation providing an ability to give immediate objective documentation for Program Directors. Also involved multiple teaching modalities to effectively engage learners. Areas for improvement include validating tools to evaluate actual performance.

Feasibility of Program Maintenance/Transferability: This assessment method is easily transferrable to help other medical schools and residencies determine competence with the EPA of informed consent.

49. Enhancing Clinical Competency Through Curricular Change

Kabat, Brock, Southern Illinois University School of Medicine, Healey, Jessica, Southern Illinois University School of Medicine

Objective/Purpose: To initiate a new curriculum to enhance the clinical and diagnostic reasoning of medical students as measured by performance on senior clinical competency exams.

Need for Innovation/Practice: Clerkship rotations should be a time of great clinical and diagnostic growth, but research suggests otherwise. Data show slowed growth of reasoning skills throughout the third and fourth years of medical school. Under the current clerkship system, students in a rotation are shuffled from physician to physician, with neither the student nor teacher earning the other's trust. With no meaningful student/teacher relationship and an idiosyncratic approach to diagnoses, clinical reasoning stagnates. This culminates in poor performance on the senior clinical competency standardized patient exams (SCCX). Currently, the minimum passing score for SCCX is set at 60-65% to prevent large cohorts of students from failing. A change to improve the clinical reasoning of medical students is needed to raise passing standards of the SCCX.

Methods, Materials and Resources used: Southern Illinois University School of Medicine is initiating a new curriculum designed to improve clinical reasoning in two ways. The first will be a redesign of the

clerkship year to an apprenticeship model. The second will be a critical clinical competency (CCC) curriculum to foster clinical and diagnostic reasoning through the first three years of medical school. An apprenticeship model is a learning process by which students become part of a profession by gradually moving into more intense participation as they are able. This requires a stable student/teacher relationship. Under the new clerkship curriculum, students will be paired with one resident or attending physician for each rotation. This will allow meaningful student/teacher interaction and an increase in clinical responsibilities as the student progresses in knowledge. The CCC curriculum will begin in the first year of medical school and spiral throughout the second and third years. CCCs are an online, interactive computer-based video series designed to build a portfolio of documented and assessed diagnostic cases based around common chief complaints (e.g., headache or chest pain). With four unique cases in each of the twelve CCCs done once a year for three years, students will create a portfolio of one hundred forty-four cases. The CCCs will provide repetitive performance, assessment, and feedback to help students master diagnostic and clinical reasoning skills.

Outcomes : We predict that the implementation of the apprenticeship-style clerkship and spiraling CCC curriculum will improve performance on SCCX so that the minimum passing score can be raised from 60-65% to 85%.

Strengths and Areas for Improvement: Although prospective in nature, areas for improvement in the curriculum may include increasing faculty and student buy-in. Change is never easy, especially when breaking tradition. Encouraging faculty and students of the need for change and the confidence in our curriculum may help assuage fears. Students are currently encouraged to evaluate each part of the curriculum through anonymous forms reviewed by Department of Medical Education faculty. This practice of student feedback will continue with the new curriculum to help meet student needs.

50. Behaviors that Promote an Inclusive Environment for Medical Students

Kaitlyn Dryer, University of Missouri School of Medicine.

Objective/Purpose: Inclusivity goes beyond the simple presence of diverse people in an organization; it requires an organizational culture where everyone feels valued as part of the community. The purpose of this study was to identify behaviors specific to the University of Missouri School of Medicine (MUSOM) that will promote an inclusive learning environment for undergraduate medical students.

Need for Innovation/Practice: While much has been written about the benefits of diversity and inclusion, there is little data on observable interpersonal behaviors that create an inclusive learning environment. To gauge the climate of inclusivity at the MUSOM, we needed to identify specific behaviors that would support an inclusive learning environment through the eyes of our students.

Methods, Materials and Resources used: To gather and validate inclusivity-promoting behaviors, we: (1) completed an extensive literature search, reviewed 168 abstracts and selected 76 articles for full review, (2) surveyed undergraduate medical students to gather confidential personal narratives (N=20) of inclusive behaviors, and (3) held two voluntary student focus groups (N=12 students). To create a “safe” environment, we recruited focus group facilitators not associated with the MUSOM. Facilitators followed a script prompting participants to rank behaviors from the literature using a modified Likert scale, discuss 8 scenarios based on student narratives and describe how specific inclusive behaviors would look in the MUSOM. We completed qualitative analysis of focus group transcripts and Likert-style ratings to group and prioritize behaviors.

Outcomes : The literature review generated nearly 60 interpersonal, inclusivity-promoting behaviors. Students submitted 20 personal narratives. Qualitative analysis of focus group transcripts yielded 90 behaviors specific to medical students and 55 behaviors for faculty and staff. We used the list of student-validated, inclusive behaviors to create a tool to assess student perceptions of inclusivity in the learning environment. The results of this study will allow the MUSOM to focus its efforts toward creating a learning environment that is inclusive of all students.

Strengths and Areas for Improvement: Third and fourth year medical students were underrepresented in the study and we continue to explore avenues to engage them in this process.

Feasibility of Program Maintenance/Transferability: Annual results from the assessment tool will guide educational programming and interventions in the MUSOM. The methods used can be easily replicated at

other universities to identify the behaviors most important within their context.

51. Chain reaction: development and implementation of an educational model to increase awareness of and access to influenza vaccine

Victoria Lucia, Oakland University

Objective/Purpose: Develop and implement a multi-tiered educational intervention for medical and public school students, while providing access to influenza vaccine to the local community, through a collaborative partnership.

Need for Innovation/Practice: Immunizing children against infectious disease has been a central mission for our national public health system. Influenza vaccination can reduce influenza illnesses, doctors' visits, missed school days, and prevent influenza-related hospitalizations and deaths. Despite these benefits, uptake is relatively low in age groups 5-12 (40%) and 13-17 (58%).¹ We describe an innovative medical/public school collaboration that implements a unique educational model for disseminating information about influenza.

Materials and Resources used:

1. Medical student participation in an existing evidence-based “integrative curricular intervention” on the importance, effectiveness, and safety of influenza vaccines and training in vaccine counseling and administration.

2. Collaboration between a medical school, school of education, and public school district to develop and implement a multi-tiered education program.

3. Implementation of a multi-tiered education program

* Medical to high school student peer education program: Medical students who received the “integrated curricular intervention” facilitated small group sessions with high school biology students to reinforce topics related to the immune system and influenza/influenza vaccine.

* High school to elementary student peer education program: High school students, with guidance from medical students, developed and presented age-appropriate posters and storybooks about the immune system and influenza to 2nd graders.

4. Community outreach through a school health fair with medical student run health-related stations, including influenza vaccine administration.

Outcomes : 15 medical students taught 51 high school students who in turn taught 50 2nd graders about the immune system and influenza vaccine. 91 people attended the health fair and 57 vaccine doses were administered, with approximately 10% being first time influenza vaccine recipients.

Strengths and Areas for Improvement: This innovative program demonstrates the value of medical students serving as vaccine educators to a school and its community. Medical students were able to apply their knowledge through this interactive educational experience for the high school students and subsequently practice their newly acquired vaccine administration skills. Although the numbers are small, the fact that families of school children attended the health fair and were vaccinated, demonstrates that a simple educational intervention in a school can impact vaccine uptake.

Feasibility of Program Maintenance/Transferability: Ongoing relationship building, including identifying mutually beneficial goals, between universities and community partners is essential. With careful planning, similar collaborative programs can be implemented and applied to other community-based vaccinations.

52. Engaged Learning Really Does Work: 8 Years of Data to Support the Shift to TBL in Medicine and Psychiatry Clerkship

Hayden, Colleen, Kirkham, Karen, Roman, Brenda, Wright State University Boonshoft School of Medicine

Objective/Purpose: To promote the advantage of converting clerkship didactics from passive to engaged learning, specifically team-based learning (TBL), based on eight years of data from internal medicine and psychiatry clerkships at Wright State University Boonshoft School of Medicine (BSOM). Both internal medicine and psychiatry decreased the number of didactic hours and shifted their pedagogical approach

during academic year 2007/08.

Need for Innovation/Practice: As the pedagogical shift in the classroom from traditional lecture-based didactics to more self-directed learning methods continues, our knowledge-based data provides evidence to support this shift within the clinical clerkships. National Board of Medical Examiners (NBME) end of clerkship examination scores provide comparison data to national performance. Overall, BSOM student performance on both the internal medicine and psychiatry NBME exams have been well above the national mean since the inception of TBL into those curricula, as compared to other clerkships.

Methods, Materials and Resources used: Eight years of data from 2006/07 to 2013/14 were analyzed for both the internal medicine and psychiatry clerkships. BSOM NBME mean scores for each year were compared to national NBME mean scores for the corresponding subject exams. Independent-samples t-tests were performed on both sets of data to indicate if the differences between the BSOM and national scores were significant.

Outcomes : There was a significant difference in the scores for internal medicine ($p = .001$) and in the scores for psychiatry ($p = .044$). These results support the assertion that the inception of TBL into the internal medicine and psychiatry curricula has had a statistically significant impact on BSOM student performance of the corresponding NBME subject exams.

Strengths and Areas for Improvement: These two clerkships show the strengths of implementing TBL into the clinical clerkship didactics. While we cannot conclusively state that changing the didactic structure to TBLs alone accounted for the sustained improvement on the NBME subject examinations in these two clerkships, the clerkships utilizing traditional lecture based didactics have NBME scores at the national average. To further understand the differences, we need to examine other factors that might contribute to the differences.

Feasibility of Program Maintenance/Transferability: TBL is an internationally recognized instructional method. Decades of data exist to support the use of TBL in the classroom to help increase retention of knowledge and teamwork skills.

53. The Four Ps of Keeping Up with Medical Education

Cecile Foshee, Cleveland Clinic.

Objective/Purpose: Medical educators should know about current and emerging trends related to their roles and the medical education field (Srivinivasan et al. 2011). Conceptually, this knowledge guides scholarly work (Glassick 2000) and contributes to career advancement (McGaghie 2009). In practice, “keeping up” requires technical proficiency to locate accurate and relevant information quickly, and self-discipline to organize and read selected materials regularly. We used the literature and expert opinion to identify strategies to keep abreast of educational practices and medical education trends.

Need for Innovation/Practice: Available “how-to-guides” for searching the literature, while informative, do not offer educators advice on how to identify, prioritize, and process the essential information needed to remain current while balancing competing personal and professional responsibilities.

Methods, Materials and Resources used: We searched electronic databases (PubMed, ERIC, PsychInfo, etc.) to locate articles to build and preserve medical educators’ fund of knowledge and sought expert opinion from participants at the 2014 meeting of Society of Directors of Research in Medical Education. At this meeting, 22 medical education experts from different institutions (North America & Europe) defined currency with the education literature and discussed effective strategies to keep abreast of educational trends and practices. Discussion points and strategies were collated and distributed (via email) to all participants immediately after the meeting to confirm the accuracy and comprehensiveness of their recommendations.

Outcomes : Based on the literature and expert opinion, we developed a 4-stage model to remain current with medical education—

The Four Ps of Keeping Up:

Plan (develop a mission statement, identify high-yield resources, develop a strategy);

Pull (monitor hot topics, conduct periodic searches, look outside your field);

Push (subscribe to relevant resources, follow experts, use technology to get organized); and
Play (develop a professional network, review/support others' scholarship, use social media).

Strengths and Areas for Improvement: We believe our strategic approach, enhanced by technology, should make the overwhelming task of "keeping up" more manageable and personally rewarding. Our model's strength is that it provides flexibility to select and tailor tips to individual needs. However, we cannot determine the effectiveness of specific tips as they work in aggregation to produce desired results.

Feasibility of Program Maintenance/Transferability: The flexibility of our model should appeal to both educators and clinicians, especially those new to medical education or those pursuing graduate degrees in education. The Four Ps of Keeping Up can help medical educators establish a personal process to turn "keeping up" with medical education into an effective routine.

54. Focus on ME (Medical Education): Developing Coordinators across the Continuum UME, GME, CME, *Kristen Rivera, Aurora Health Care.*

Objective/Purpose: To enhance medical education (ME) coordinators' ability to support alignment of physician education programs across the continuum through a Focus on ME model.

Need for Innovation/Practice: Nationally ME aspires to become a true continuum through shared emphasis on competency based approaches and common topics (e.g., quality, safety, professionalism). Currently there are multiple regional/national forums through which coordinators can learn about ME innovations and changes. However, while national calls to align training across the continuum have resulted in dialogue amongst accrediting bodies (e.g., LCME, ACGME, ACCME) currently there are no published models for local ME Coordinator training models to promote thinking across the continuum.

Methods, Materials and Resources used: UME, GME, CME managers recognized that significant portions of ME coordinators responsibilities were based on a common foundational knowledge and skills (ranging from competencies to documentation processes) and that all coordinators must adapt to the ever changing education and health care environments. To create our local Focus on ME model: (1) managers individually communicated need for coordinator change; (2) transitioned to single communication from all 3 managers to all coordinators; (3) convened shared 90 minute session for all coordinators during business hours; (4) analyzed data from session evaluation to prioritize learning needs resulting in agenda for subsequent sessions.

Outcomes : All coordinators attended the initial Focus on ME during which goals were reviewed and all coordinators then actively engaged in small group mixed ME level discussions to identify cross cutting topics, needs and strategies to achieve these goals. Topic areas for further development were identified including training on role specific job knowledge, technology, professional/personal growth, communication and system impact. Surveys were anonymously completed by 56% (13/23) with 77% of respondents reporting that the meeting was valuable. Strengths included breakout sessions, sharing best practices and understanding other roles within ME.

Strengths and Areas for Improvement: Based on feedback, the quarterly, interactive 2-hour sessions now focus on continuum alignment (nationally via accreditation standards with local examples), impacts and opportunities specific to their roles, and shared best practices. During sessions and/or as pre-work participants use various technologies to continue to build these skill sets.

Feasibility of Program Maintenance/Transferability: Focus on ME sessions are sustained through alignment with organizational priorities and reporting of all managers to a common senior leader accountable for ME continuum. Processes and session topics/materials can be easily adapted by other programs.

55. FARM (Frontier and Rural Medicine) Long Distance Clinical Skills Assessment in a Rural Setting via TeleOSCE

Valerie Hearn, University of South Dakota Sanford School of Medicine

Objective/Purpose: Clinical skills assessment of University of South Dakota Sanford School of Medicine LIC students located at remote rural campuses.

Need for Innovation/Practice: Six students located at five FARM locations for the 9 month LIC are assessed regularly by physician site coordinators, but have limited contact with main campus faculty. Development and implementation of a teleOSCE case allows the students to remain at their clinical sites, interact with a standardized patient, and be evaluated by the FARM director and OSCE director.

Methods, Materials and Resources used: A diabetic foot ulcer teleOSCE case developed by Palmer, Dodson, and Biagioli at Oregon Health & Science University Department of Family Medicine was used with permission by the authors. The case was modified to reflect South Dakota geographies. Faculty examiners and SP's were based in the simulation center. Students were at their respective sites. Polycom™ web-based videoconferencing technology was used for the student-SP encounter and feedback. Blood sugar values and image of the diabetic toe were sent across the system via Microsoft PowerPoint. B-Line Medical software was used for recording the sessions, examiner checklist grading, and student note documentation. Faculty examiners viewed the session via a one way mirror in the simulation control room.

Outcomes : FARM and OSCE directors observed students engaging in a SP encounter and assessed interpersonal skills, clinical knowledge, documentation, and use of technology. All students demonstrated room for improvement in one or more of these areas. Students completed a brief evaluation following the session. The technology worked. The clinical scenario was realistic. Immediate feedback was valuable. More teleOSCE learning activities were desired.

Strengths and Areas for Improvement: The activity was well received by the students. Technology worked well but videoconferencing was laborious to arrange amongst the different hospital systems. B Line medical software facilitated grading. Additional cases need to be developed, including cases that allow for auscultation of heart and lungs.

Feasibility of Program Maintenance/Transferability: Most US medical schools have the infrastructure to implement this assessment. Other formats could be used such as Adobe Connect (used in Oregon), SKYPE, WebEx, and Google Hangout. The case transferred easily from rural Oregon to rural South Dakota and could be used at our other two remote campuses. This provides an excellent way for students at remote sites to remain connected to main campus faculty.

56. Putting the Pieces Together: A Curriculum Designed to Integrate the Imaging and Laboratory Findings of a Symptomatic Patient

Lynda Misra, OUWB

Objective/Purpose: ED-17 states that the educational opportunities must be available in a medical education program in multidisciplinary content areas (e.g., emergency medicine, geriatrics) and in the disciplines that support general medical practice (e.g., diagnostic imaging, clinical pathology).

Need for Innovation/Practice: At Oakland University William Beaumont we designed a required two-week case based clerkship called Diagnostic Medicine that integrates the supporting disciplines diagnostic imaging and pathology. Didactic lectures, small group sessions, and online modules allow the student to take a daily clinical presentation, learn the appropriate radiologic imaging and laboratory studies to order, and interpret these results.

Methods, Materials and Resources used: The Department of Radiology staff runs the morning session. The day begins with a didactic on imaging the clinical presentation of the day. In the cough session, the didactic covers the various chest views, indications, appropriateness of chest radiography and CT, and interpretation techniques for a two-view chest radiograph. The students then participate in a small group session taking unknown chest cases and are brought to the chest reading room to join the radiologists. Students spend their afternoons in the Department of Pathology. Using the clinical presentation of the day, the teaching activities focus on ordering tests, submitting specimens, interpreting the results, and making diagnoses. Students are brought to the laboratory to review slides, observe specimen processing and instrumentation operation. During the anemia session a diagnostic tumor board with integration of both imaging and pathology is prepared to demonstrate the team-based approach in a diagnostic workup. Reading and pretest material are provided to encourage self-directed active learning.

Outcomes : The Diagnostic Medicine cumulative grade is based on clinical performance evaluations, a diagnostic radiology online exam with questions obtained from the Association of University Radiologists national web based RadiologyExamWeb database, and a pathology written exam. The student evaluations

and exam scores are utilized for outcome measurement on a monthly and yearly basis.

Strengths and Areas for Improvement: In conclusion, Diagnostic Medicine is a novel approach to the LCME ED-17 requirement. It is a curriculum that demonstrates the collaboration of subspecialties in the care of a patient. The design is to teach medical students the fundamental knowledge and skills to choosing imaging studies and lab tests wisely. By putting the pieces of the two disciplines together we hope to simulate the way the information is provided to the primary doctor or emergency room physician after seeing a patient.

Feasibility of Program Maintenance/Transferability: The program is easily transferable to other medical schools. The advantages include having live interaction and the recruiting faculty. Further discussion to take place in the poster.

57. The Ohio State University College of Medicine Lead.Serve.Inspire Career Exploration Thread

Joanne Lynn, Ohio State

Objective/Purpose: The Lead.Serve.Inspire curricular Career Exploration Thread provides OSU medical students with more extensive information about careers and provides earlier exposure to information about specific specialties and department faculty mentors than the previous curriculum permitted and should provide better preparation for career selection.

Need for Innovation/Practice: Career advising is a crucial need for medical students especially as the residency match process becomes increasingly competitive, financial concerns such as indebtedness deepen and some students prioritize lifestyle and other considerations. Many schools struggle to provide optimal career advising as demonstrated by mediocre student satisfaction responses on AAMC GQ questions. Noncompliance with the LCME requirement to have an effective career advising program is not an infrequent finding on accreditation visits. Different medical schools have tried various approaches to bring career advising within the curriculum or to coordinate extracurricular and web based activities to provide increased and earlier career advising exposure.

Methods, Materials and Resources used: The primary components of the OSU career thread are three Career Exploration Weeks that are spread throughout the first two years of the curriculum in addition to short presentations outside of those special weeks. The Career Exploration Weeks include presentations about general career topics such as specialty selection, academic vs private practice careers, non-clinical careers, work force issues, professional development as well as four two morning in-depth exposures to specific specialties for each student. Assignments include readings, reflections and exercises (including AAMC Careers in Medicine website material). Additional topics covered include financial issues for medical students, wellness & resiliency topics and discussion of generational differences in medicine. This career thread uses significant curricular time and faculty and staff resources in that each of 21 departments develop a two morning experience for approximately 20 students twice a year.

Outcomes : The Career Exploration Thread exposes OSU LSI medical students to more extensive information about careers and earlier exposure to information about specific specialties and department staff than the previous curriculum and should better prepare them for career selection.

Strengths and Areas for Improvement: This program was given the first annual AAMC Careers in Medicine Excellence in Career Advising Program Award in recognition of the intensive career advising content. We will continue to work on improving evaluation and outcome measures. Additional improvements would be to integrate additional career advising topics into the third and fourth year of the curriculum.

Feasibility of Program Maintenance/Transferability: Because this career thread is faculty intensive and requires participation from all clinical departments, significant communication and effort is required to motivate departments to participate in an era of heightened focus on clinical productivity. But most departments value the opportunity to have an early opportunity to introduce medical students to their specialty. Portions or all of this career thread could be easily transferred to other schools.

58. STEPS Towards Better Health Care Delivery: A Student-Led Multidisciplinary Approach

Maggie Rechel, Boonshoft School of Medicine

Objective/Purpose: STEPs primary goal is to build a sustainable, multidisciplinary student team to motivate underserved populations toward positive health improvements.

Need for Innovation/Practice: STEPS was formed in 2012 as a student-led initiative to address the health concerns of the homeless population of Dayton, OH. Hosted at local homeless shelters, each STEPS session enables students from multiple health programs to take participant's blood pressure and glucose. Participants and students then open a dialogue about the participant's current health state. Utilizing motivational interviewing, students log three health goals for each participant, and their progress is noted on future visits.

Methods, Materials and Resources used: Hosted at local homeless shelters, each STEPS Initiative enables students from multiple health programs to assess participants blood pressure, weight, and BMI. Participants then enter a room with two students to detail their health status and open a dialogue about the participant's current health state. Utilizing motivational interviewing, students log three health goals for each participant, and their progress is noted on future visits.

Outcomes : STEPS started with monthly sessions at the men's homeless shelter in the fall of 2012. Bimonthly sessions were started in February of 2014. In fall of 2014, sessions were expanded to the local women's shelter. With the increase of student volunteers, the amount of participants served has increased to over 100. STEPS was recognized as the United Way's Volunteers of the Month in May 2013. STEPS applied for a Social Entrepreneurship Grant offered through WSU Office of Multicultural Affairs. They were awarded \$2,400. First and second year medical students are able to receive Service Learning credit through a Student-Led elective while third year pharmacy students are able to receive Introductory Pharmacy Practice Experience credit, helping lead to the growth of volunteer base. The executive board began with 7 medical students and has increased to 27 students representing four different healthcare schools. 87% of volunteers attend more than one session. All volunteers that attended a training session reported feeling more confident in their interviewing skills post training. Surveyed volunteers also had a significant increase in confidence in taking blood pressure or a blood glucose. 62% of students reported that working on an interdisciplinary team played a great role in why they participate in STEPS.

Strengths and Areas for Improvement: STEPS has grown as a multidisciplinary team to include medicine, nursing, pharmacy and psychology. The initiative capitalizes on the principle that in order to overcome issues related to contextual variables, all specialties need to work together to ensure continuity of care. By creating a sustainable multidisciplinary group, STEPS has enabled students to grow as professionals, and learn the invaluable lesson that each patient must be viewed in the context of their community and accessibility to social resources. STEPS strives to assimilate all aspects of health care as each plays a pivotal role in quality of services provided.

Feasibility of Program Maintenance/Transferability:

SUSTAINABILITY: Focus on recruiting students from the first year classes of each program to replace students entering the busier clinical years. STEPS also has plans to promote similar programming at other medical schools in the coming year.

SOCIAL IMPACT: Increasing to four sessions per month, two at the men's shelter and two at the women's shelter after January 1st, adding a psycho-educational program for homeless women. An increased interest in measuring health outcomes has led to the group modifying their forms and applying for IRB approval to utilize and potentially act upon collected data, with an emphasis on preventative health, medication adherence, and health resources in the community.

59. WikiNotes: Unifying Preclinical Education

Jacob Price, Wayne State University

Objective/Purpose: We propose to create a wiki database which contains the entirety of pre-clinical coursework with topics cross-linked between separate lectures courses.

Need for Innovation/Practice: The sheer magnitude of preclinical coursework necessitates division of the material into course and lecture sized portions. Whether these divisions are guided by a systems based or traditional approach, related topics are inevitably separated and fragmented. While students eventually erase these divisions as they progress through their education, on first pass many topics may appear isolated and without a place in the broader knowledge landscape. Enabling students to trace a particular

topic as it relates to material beyond the course at hand- to relate it to topics covered in units past and topics yet to come in future courses will allow students to begin solidifying and unifying their medical knowledge base earlier on with improved knowledge retention.

Methods, Materials and Resources used: Our source materials for this project are the lecture notes provided at Wayne State University School of Medicine which are provided as pdfs. As the style of these notes varies significantly from lecturer to lecturer, these are occasionally supplemented with lecture slides to facilitate the transition to a wiki. The WikiNotes site is hosted on Wayne servers. The software used to create the wiki is the open source Mediawiki package which allows editing of the site from any web browser on any system (PC, tablet, smartphone). To ensure privacy of our copy written lecture materials, the site is protected by the username/password set that runs the WSUSOM email system.

Outcomes : Our primary measure of outcomes is the usage of the site. Mediawiki includes some basic tools which allow us to measure the number of users to a single page at the time of inquiry and the overall number of visits to a given page. WikiNotes' front page has accumulated over 40,000 views, and 30 individual pages have received views in excess of 1,000 in the 3 years since the project's inception. We have also been able to observe some patterns of usage which reflect our goals for the site. For example, as classes cover respiratory bacteria and viruses in Microbiology, we have seen a simultaneous increase in views in Respiratory Pathophysiology, a course coming several months later. Similarly, when covering syphilis and tabes dorsalis (again in Microbiology), we observed increased activity on the pages of our Anatomy lectures (given 10-12 months previous) covering gait disturbances and the actions of nerves and muscles in the lower extremities.

Strengths and Areas for Improvement: The primary strength of this project is the ability to host and cross-link the entirety of preclinical coursework in a single, searchable location. The open-source character of project allows any user to edit and correct pages, as well as provide links to related study aids (quizzes, student notes, etc.). Our main shortcoming at this time is our failure to engage faculty in taking a direct role in editing the site. Achieving this will enable us to keep abreast with changes in notes and to standardize lecture notes into a more wiki friendly format. Improved tools for monitoring the site's use will also better enable us to understand its current utility to students.

Feasibility of Program Maintenance/Transferability: In its current incarnation, the site will continue to aid students so long as a few individuals are able to keep materials up to date and point their classmates towards the resources it provides. The foundational work to set the site up is rather basic and could be easily repeated to start a wiki at another school or program (nursing, pharmacy, etc.). The content our WikiNotes is specific to the WSUSOM preclinical curriculum which may limit its use to outsiders. However, the underlying concepts are applicable to any program, and the wiki's flexibility should allow it to adapt to any form of lecture notes which may be in use.

60. **WITHDRAWN** "Let's Talk about WHAT?!? Sexuality Education in Medical Schools: Report of a pilot program implementation."

Michelle Linschoten, MedSexEd St. Louis

Objective/Purpose: To summarize the process and results of an IRB-approved pilot program, a one-hour seminar designed for and implemented with medical students in their third year OB/Gyn clerkship Need for Innovation/Practice: Medical students' training in the United States often neglects comprehensive sexual wellness education. Among the few medical schools who do offer coursework on the topic, the materials covered are unstandardized. Given the United States' poor sexual health status and the mission of the medical field, medical providers ought to be to be knowledgeable and competent caregivers for sexual health problems. Unfortunately, many medical students still express discomfort discussing sex with patients and dissatisfaction in the training opportunities at their schools.

Program Objectives: To develop a training module covering effective and sensitive means of addressing sexuality concerns with patients -and- to pilot the program with OB/Gyn rotation students at Washington University Medical School, evaluating effectiveness using pre/post-tests.

Methods, Materials and Resources used: I implemented the program "Sexual Wellness Interviewing: Increasing comfort and competency" as part of the required series of one-hour lectures for the third year OB/Gyn clerkship. Program development was based on interviews with educators in the field, collaboration

with the OB/Gyn clerkship leaders, and reviews of existing literature on medical education, especially on sexuality topics. While no best evidence for sexuality education among medical students was found, there is solid evidence of the necessity of sexual health education with the medical provider population, including the development of skills needed to effectively and sensitively address such a personal topic with patients. Best practices for medical education indicate that modeling of appropriate clinical behavior, simulations of patient-provider interactions, and practice are optimal strategies for teaching such skills. The resulting program included the following learning techniques: video demonstrations, role playing, small group processing, and large group discussion and reflection. Pre- and post-tests assessed attitudes, knowledge, and self-perception of skills before and after the intervention. References available upon request.

Outcomes : 11 students participated in the workshop (M=7, F = 4). All were between age 21 and 29. A paired samples t-test found no significant change in overall knowledge scores, individual knowledge questions, or attitudes ($p>0.05$). Of the four personal skills surveyed, two significantly increased: sense of comfort initiating discussions on sexual wellness with patients [$t(10) = -2.89, p<0.05$] and sense of ability to discuss sexual health effectively [$t(10) = -10, p<0.05$].

Strengths and Areas for Improvement: The evaluation showed the program had a positive influence on the medical students' sense of comfort bringing up sexual health and ability to discuss sexuality effectively with patients. No significant changes, positive or negative, were otherwise found. While these results are promising, additional interventions more evaluations will be necessary to truly determine its effectiveness in any area of measurement.

Feasibility of Program Maintenance/Transferability: The program was designed to fit easily in an OB/Gyn clerkship lecture series, and thus should have high transferability among medical schools in the United States. Program maintenance should include regular reviews of new literature to validate current methods or indicate changes for best practice in education and sexuality training. Contracting with a sexuality education consulting firm would help ease the time related cost of maintenance.

61. Using Web Applications to Improve Exam Quality and Student Feedback in a Medical School Anatomy Course

Courtney Orsbon, University of Chicago

Objective/Purpose: We developed a novel web application, GALEN (Gross Anatomy Learning Evaluation Navigator), to analyze data from computer-based exams, identify potential issues with questions, and communicate results to students.

Need for Innovation/Practice: Computer-based assessment is rapidly transforming medical education, but best practices for generating and communicating student and instructor feedback remain a work in progress. Issues persist regarding meaningful use of exam data to address course weaknesses, assess exam quality, and disseminate detailed reports to students. Without application development and curricular remodeling, issues with computer-based tests could persist and affect the quality of the course. In our study, we hypothesized that our web application would allow anatomy teaching staff to systematically improve exams and first year students to glean important insights into anatomical theme performance.

Methods, Materials and Resources used: All data were from the first-year anatomy course at the University of Chicago Pritzker School of Medicine. Open source materials from the R and the Ruby on Rails communities were used to analyze anonymized exam data from 2013 exams and create the two parts of GALEN – Professor Portal and Student Portal. In Fall 2014, a workflow was instituted. After each exam, teaching staff accessed GALEN: Professor Portal to assess test items. GALEN: Professor Portal enabled the teaching staff to find answer key mistakes, eliminate poorly discriminating questions, and analyze performance on eight anatomical themes: Structure, Function, Vasculature, Lymphatics, Nervous System, Tissue Histology, Imaging, and Development. Upon exam re-grading, data were further processed and delivered to GALEN: Student Portal, giving students access to in-depth and secure exam reports on individual performance. Students were also surveyed about their impressions of this new tool.

Outcomes : Exam data were gathered from 181 students (2013: $n = 86$, 2014: $n = 95$). GALEN directed re-grading of the 2014 exams resulted in an average revision of 92.5% of exams, compared to an average revision of 13.4% of exams in 2013 ($P < 0.0001$). Moreover, students across the performance spectrum benefited from GALEN-directed re-grades in 2014, while only students who initially failed exams in 2013

received re-grades. GALEN-directed revisions led to a 2% mean class-average increase in 2014, compared to a 0.6% mean class-average increase in 2013 ($P < 0.001$). 32 students completed the GALEN Survey (response rate = 35.5%). 26 students (81.25%) agreed or strongly agreed that it was easy to navigate through GALEN. 29 students (90%) agreed or strongly agreed that they liked the breakdown of performance by theme. 29 students (90%) agreed or strongly agreed that in the future they would like to be able to compare thematic performance across exams. Five students (15.6%) agreed that GALEN helped them prepare for subsequent exams.

Strengths and Areas for Improvement: GALEN improved exam quality, ensured equitable exam re-grading, and enabled data-driven curricular assessment immediately after exams. Students agreed GALEN was easy to navigate, liked the presentation of exam performance by theme and wanted to compare theme performance across exams. Overall, students were neutral about GALEN's ability to help students prepare for other exams. However, the portal was made available during the last week of the course, and future directions include deploying the portal earlier in the course to see if feedback improves student satisfaction and performance.

Feasibility of Program Maintenance/Transferability: We will continue developing GALEN to improve the anatomy course experience for faculty and students. We also aim to analyze factors associated with student performance across anatomical themes. We believe that the workflow and processing will be easily transferable to other classes at medical schools, as well as institutions across the educational spectrum.

62. Using Google Analytics to Support Continuous Improvement of Your Mobile Enabled Learning Website, *Deborah Simpson, Aurora Health Care*

Objective/Purpose: To determine the relative value of using face-to-face discussions versus twitter to attract learners to a mobile enabled geriatrics education website.

Need for Innovation/Practice: Medical education across the continuum continues to transition from local face-to-face (F2F) classrooms to globally accessible, digital based delivery systems (twitter journal clubs, MOOCs). Yet, independent of how education is delivered, common to all delivery modalities is the need to evaluate the "intervention". Applying Kirkpatrick's multi-level training evaluation model to mobile enabled websites (MEW) would suggest that evaluation begins with reaction/satisfaction (do they come, stay awhile) and learning. As educators, evaluating a MEW can be challenging ("just in time" MEW design; unregistered learners who don't complete evaluation forms) but to improve our sites, we must be informed by learners' "data".

Methods, Materials and Resources used: Geriatric Fast Facts (GFFs) [www.geriatricfastfacts.com] is a MEW that has been "live" since January 2014. It contains 1-2 page concise, peer-reviewed evidence-based educational summaries on key clinically oriented topics in geriatrics. It can be searched using free word text or categories (e.g., review of systems, geriatric topics, underlying science), allows users to tag favorites and share via e-mail and/or social media. The site was built to support use of Google Analytics (GAs). GAs generates detailed statistics about a website's traffic including where users came from (e.g., search engines, social networks) and within site page views (e.g., time, flow). To determine most effective/efficient staff outreach strategies, date/time of GFF announcements using traditional methods (e.g., talks, exhibits at national meetings) and social media (e.g., tweet for new GFF) were plotted using GAs data for a 3-month time period.

Outcomes : Overall, F2F was the most effective strategy to increase page views based on three regional/national geriatrics or education meetings (Range 164-335 page views). Less than 20 sessions were initiated via social media referent with Twitter accounting for almost all activity which directed learners to specific GFFs.

Strengths and Areas for Improvement: Access to learning is best achieved for a new MEW via combination strategy of F2F and social media. To assess learning, each GFF now contains a self-report item "This GFF [improved, confirmed, did not impact] my competence in geriatrics and selected GFFs will incorporate a quiz with score reports to track learning.

Feasibility of Program Maintenance/Transferability: GAs is a powerful, sustainable and minimal/no cost data source to track access to mobile learning sites and reaction/satisfaction metrics. Utilizing GA's big

data abilities educators can track learning progression and impacts.

63. Community approach to primary care training.

Michelle Davidson, Louis Stokes VA Medical Center

Objective/Purpose: The Cleveland VA's Center of Excellence in Primary Care (COE), one of five COE programs nationally, is designed to improve the quality of primary care training and practice. By fostering multidisciplinary, patient-centered practices, physicians, nurse practitioners, and psychology learners are trained to meet the requirements of coordinated and longitudinal care in the 21st century. The Proactive Care Dimension (PCD) is one of six COE training dimensions and is designed to prepare learners to provide culturally sensitive care as well as promote shared decision making and awareness of psychosocial barriers to medical care.

Need for Innovation/Practice: The complexity of the 21st century healthcare environment demands that providers be trained to deliver multidisciplinary, patient-centered primary care. Often, this means delivering care in the context of patient communities. Projects involving the homeless are one way to develop teamwork among trainees in a patient centered environment.

Methods, Materials and Resources used: Two community events were held at an inner-city 350-bed shelter for homeless men. A team of multidisciplinary learners provided health assessments, podiatric care, immunizations, and crisis resource information. Following the event, learners completed brief reflection statements which include recommendations for future programs.

Outcomes : In two sessions, 58 shelter residents were encountered. One hundred percent (n=12) of learners provided feedback. Sixty-three percent of learners deemed the experience positive and educational. In their statements, 100% of learners recommended a face-to-face orientation on expectations prior to the event, and several learners expressed concerns about transportation and personal security.

Strengths and Areas for Improvement: Learner feedback is essential in meeting the goals of the PCD. Based on feedback analysis, the predominant theme is that learners desire increased autonomy in planning and facilitating outreach events. Taking this into account, the PCD staff will mentor learners in self-facilitating future community events.

Feasibility of Program Maintenance/Transferability: COE is a primary care training initiative funded by the Office of Academic Affairs. As a component of the PCD, the community event may evolve and change focus to meet the needs of learners and patient populations. However, training learners to deliver patient-centered care is essential to the PCD dimension, and the intention is that the community event be maintained as an aspect of COE.

64. Aligning Care Options (ACO): An Interdisciplinary Approach to Complex Patient Management

Michelle Davidson, Louis Stokes VA Medical Center

Objective/Purpose: Five Centers of Excellence in Primary Care Education (COE) are implementing and testing approaches to preparing physician, nurse practitioner, and behavioral medicine learners for collaborative, patient centered practices that provide coordinated longitudinal care in the 21st century. One strategy implemented by the Cleveland COE towards this goal was to establish an interdisciplinary conference where multiple disciplines are present for an active discussion about a challenging/complex patient and a concrete action plan for care is created.

Identify complex patients and conceptualize with a patient-centered approach

Demonstrate concise case presentation skills

Develop understanding and respect of other specializations and effective ways to collaborate

To identify key shared decision making (SDM) opportunities

Need for Innovation/Practice: Learners regularly expressed difficulty, frustration, and helplessness managing psychosocially complex patients and were seeking guidance to better serve this challenging population. ACO was developed as a forum for interdisciplinary discussion with concrete and realistic action planning which then can be directly enacted in clinic.

Methods, Materials and Resources used: Presenter facilitates a fifty minute conference utilizing a PowerPoint presentation highlighting the history of the complex patient's case, including opportunities for SDM. Consultants from other disciplines are invited to participate. During the course of the session, the group develops a concrete action plan for next-steps and best practices for this unique patient. After the plan is enacted, progress is reported at the next session, and the group engages in problem-solving/brainstorming as necessary.

Outcomes : To date, thirteen ACO conferences have occurred. Feedback reports are generated by learners and facilitators as a means of evaluation after each session. Overall feedback (4.77), usefulness (4.62), and confidence that the participant could use the skills acquired during session (4.41) are scored on a 5 point Likert scale.

Strengths and Areas for Improvement: Written comments from learners has been very positive, highlighting the importance of a group discussion with multiple perspectives that focus on setting achievable expectations, specific intervention techniques, and a sense of patient ownership. The conference has been referred to as "critical" in development and an important step to establish a culture where interdisciplinary care is considered best practice. Moving forward, an aim of the conference will be to incorporate a permanent aspect of primary care and broaden the number of disciplines participating.

Feasibility of Program Maintenance/Transferability: ACO is both sustainable and generalizable in many settings as it is applicable in multiple clinical situations and can be incorporated into training programs and didactics without requiring funding.

65. Selection and Implementation a Mobile Application for Direct Observation and Feedback in Clinical Settings

Victoria Cannon, Ohio State University

Objective/Purpose: The purpose of this poster is to share the process and lessons learned we experienced in selecting and implementing a mobile application for direct observation and feedback. We believe our experiences on this project can help inform other colleges and schools interested in technology solutions.

Need for Innovation/Practice: The Ohio State University College of Medicine's Lead Serve Inspire curriculum is competency based and requires multiple assessments of students across all four years of medical school to ensure they have mastered the program's competencies. An important and sometimes difficult area to assess is real-time observations of students in clinical settings as these environments are typically not conducive to structured assessments. Often this is due to issues such as lack of internet connectivity or restrictions on computer usage. However, assessing students working in the clinical environment is absolutely necessary to ensure they have obtained the required skills.

Methods, Materials and Resources used: The College of Medicine performed a needs assessment to determine requirements for an application that would allow for direct observations of students in clinical environments. Key amongst the requirements was the ability to complete the forms off-line on student-provided iPads. Once requirements were gathered and prioritized, the College conducted a review of solutions available in the market and ultimately chose an application called My Progress. A task force was then assembled to pilot use of the application across Med 1 and Med 3 programs, with membership from across all curricular areas including IT.

Outcomes : Following the pilot, the application was launched to over 1000 student users in all three parts of the curriculum as well as in the Medical Genetics graduate program. The programs have developed and deployed more than 100 assessment forms, moving beyond direct observation and feedback to include student logging of procedures and encounters, self-assessments, and summative assessments for practical exams. Six months following the launch there have been more than 10,000 assessments completed through the application.

Strengths and Areas for Improvement: Strengths include the flexibility of collecting direct observations of student performance in clinical setting and a mechanism to provide immediate feedback on their performance. Additionally, this tool has allowed us to eliminate the use of paper forms in many of our curricular areas. Areas for improvement include reporting usability enhancements to the application.

Feasibility of Program Maintenance/Transferability: We hope that we can share our experiences and

lessons learned with other colleges and schools working to implement tools to assess and provide feedback to students in clinical settings.

66. Innovation in Practice through the Summer Medical Research Program: Developing the Latino Pipeline in Academic Medicine

Mosqueda, Juan, University of Illinois at Chicago - College of Medicine, Barnes, Jessica, University of Illinois at Chicago - College of Medicine

Objective/Purpose: The purpose of this program is to expose Hispanic medical students to biomedical and clinical research and encourage them to pursue academic careers. Hispanics constitute only 3.8% of medical school faculty, while academic health centers care for an ever-increasing proportion of Latino patients.

Need for Innovation/Practice: The Hispanic Center of Excellence (HCOE) provides a hands-on Summer Medical Research Program (SRMP) to rising second year Latino medical students. The 10-week program exposes students to academic careers through extended experiences that typically are not available in the regular medical school curriculum. Innovative programs such as this are critical to increase workforce diversity in academic centers.

Methods, Materials and Resources used: From 2013-2014, 34 Hispanic students were admitted and completed the program. Students were matched with faculty preceptors, integrated into research laboratories, and produced independent research projects. A pre-post online survey was utilized to assess key outcomes; 29 students participated (85% response rate). Analysis was conducted using a paired t-test and content analysis was used for open-ended responses regarding perceptions of academic careers.

Outcomes : Of the 29 respondents, 62% were female, and 44% first-generation college graduates. From pre- to post-, there were significant changes ($p < 0.05$) in student knowledge regarding research design, data collection and analysis processes, scientific manuscript development, and careers in academic medicine. Significant changes ($p < 0.01$) were reported in self-efficacy for conducting a literature review, interpreting research results, writing a publishable manuscript, and independently formulate ideas for own research project. There was a 30% increase in number of students reporting interest in pursuing a career in academic medicine. Qualitatively, students developed stronger definitions of academic medicine with emphasis on teaching opportunities, innovation in the field, and evidence-based practices. Overall, majority of students showed substantial increases in knowledge, self-efficacy, and motivation related to academic medicine careers.

Strengths and Areas for Improvement: These findings build on current literature and specifically further strengthens Sanchez et al. (2013) work regarding underrepresented minority student perceptions of academic medicine. Program outcome data may offer best practices and solutions for other medical pipeline programs. Areas of improvement include expanding program capacity, formalizing seminar objectives, and sustaining evaluation and tracking efforts across future cohorts.

Feasibility of Program Maintenance/Transferability: Program sustainability will occur via external funding streams, designated faculty member(s) for program development, and dedicated faculty preceptors and research laboratories. This program can be implemented at other research institutions that serve Latino medical students and have access to appropriate and engaged minority faculty preceptors.

67. Making Medical School More Like Hogwarts: The House and Learning Community Program at Chicago Medical School

Javier Farinas, Chicago Medical School

Objective/Purpose: The mission of the House and Learning Community Program is to enhance the learning environment and success of medical students through dynamic, engaged and relationship-centered communities for curricular and co-curricular learning and engagement. This poster will briefly describe the program and provide student perspectives on the impact this program has had on their medical school experience.

Need for Innovation/Practice: Medical students often feel alone and disconnected from their peers due to the massive amounts of time spent in lectures, labs, and studying. To establish a sense of community

amongst medical students, the House and Learning Community Program divides each class of 190 students into four learning communities. The same groups of students meet on a regular basis, interact with assigned faculty mentors, and foster interpersonal relationships that have social and academic implications.

Methods, Materials and Resources used: Each medical class is organized into four learning communities, and each learning community is part of a house. Each house comprises one learning community from each of the M1-M4 classes. Within each community are various student leadership positions that are responsible for the co-curricular aspects of the program. Wellness Chairs, Social Chairs, Peer Mentoring Chairs, and Learning Community Representatives oversee and plan events for their communities. Horizontal participation amongst the four communities in each house is encouraged to enhance the medical school experience with contact across classes.

Outcomes : Results of a survey scheduled for early spring 2015 to rate the success and effectiveness of events hosted by the House and Learning Community Program will be presented. Feedback obtained will shape the future structure of the program.

Strengths and Areas for Improvement: Despite being a fairly new system, there has been tremendous success in fostering community amongst the current M1-M4 classes through the House and Learning Community Program. Through the addition of the various chair positions a co-curricular component has been added that further addresses student needs outside of the classroom. Peer mentoring has allowed students to receive pearls of wisdom, helpful advice, and study tips from upper classmen. The goal of the student leadership program is to incorporate a vertical component where M1s, M2s, M3s, and M4s in the same house interact in mentoring, social, and wellness events. Currently as the program is in its early stages of cross-class integration, these opportunities need expansion. The current M1 class has begun incorporating a point system to encourage student participation. At the end of the academic school year, points will be tallied and the winning house will receive the House Cup to possess until the following academic year. The point system will incorporate House and Learning Community Program events, as well as outside events such as community service projects, intramural sports, inter-professional collaborations, and school pride.

Feasibility of Program Maintenance/Transferability: With financial and logistic support from the Office of Student Affairs, the program is sustainable. Each student leadership position lasts the duration of medical school, and students meet within their respective communities to share ideas, feedback, and voice any concerns. With continued guidance from Student Affairs and mentors from previous classes, this program will grow and succeed.

68. Going Beyond 70% Student Participation: An Innovative Model for Implementing the LCME Independent Student Survey

Osamu Iyoha, Wayne State University School of Medicine

Objective/Purpose: Every 8 years, medical schools are re-accredited by the Liaison Committee of Medical Education (LCME). Part of that process includes an Independent Student Survey (ISS), in which a student committee is tasked with collecting data via a student-managed survey to all students and analyzing that survey data in order to compose an independent survey report. The purpose of this poster is to discuss innovative strategies that were implemented by the student survey committee to increase student participation at Wayne State University School of Medicine.

Need for Innovation/Practice: Historically, student participation on the ISS has been an area of concern, with most medical schools unable to achieve the ideal goal of 70% student participation. With this in mind, the student survey committee at Wayne State University School of Medicine employed a number of innovative strategies in order to increase student participation in the survey, resulting in an outstanding 87.5% overall participation!

Methods, Materials and Resources used: The Independent Student Survey Committee used a number of PR strategies and advertising tactics to increase class participation in the student survey, including:

1. Make student knowledgeable about process

-Work with faculty on the LCME workgroups to hold an LCME "Launch Day" prior to the survey's launch to increase

student awareness about the student survey and re-accreditation process

2. Provide incentives for student participation

-Enter participating students into prize raffles (daily, weekly, and grand prizes) to encourage student participation

-Employ a "Pizza Party" for any class that achieves over 80 % participation

3. Keep students engaged in process

-Use fun visual cues to disseminate survey information

-Send fun, targeted email reminders every day with information about the LCME accreditation process and the importance of completing the survey , along with survey response rates per class to engender healthy competition

4. Recruit student leaders in the process Survey reminders by Clinical Campus Representatives, Student Senate members, Student Organization leaders

Outcomes : The student survey committee was able to achieve an impressive goal of 87% overall student participation.

Strengths and Areas for Improvement: Although the Student Survey Committee reached an impressive goal of 87% overall student participation, much was learned along the way. Student feedback regarding the survey revealed a number of areas that can be improved in order to increase student participation even further and improve student sentiment toward the survey process:

-Length of survey

-Prompting students to comment after choosing a low rating

-Survey formatting errors -Making students feel "forced" to fill out survey

-Allowing students to pause the survey and resume at a later time

-Providing more frequent comment boxes instead of just one at the end

Feasibility of Program Maintenance/Transferability: Achieving over 70% participation on the student survey is of extreme importance because it increases the validity of survey findings and aids in accurately characterizing the strengths and areas of concern in the Student Analysis Report, which is a critical component of the LCME reaccreditation process. We hope that our model for implementing the student survey will help student survey committees at other institutions increase student participation during their respective survey process!

69. Early Application of Communication Curriculum Using an Incremental Model of Skill Development

Anthony Brenneman, University of Iowa Carver College of Medicine

Objective/Purpose: Learning communication skills should be goal oriented, experiential and linked to clinical practice and clinical reasoning. We report on a new first year course that combines several experiential teaching methods to incrementally build students' communication skills.

Need for Innovation/Practice: Our college has undergone a major curriculum renewal and realignment of coursework requiring new approaches to learning material. With this came new opportunities for innovation within our communications curriculum. Additions of experiential learning (ability to practice skills, immediate feedback and re-practice) enhance learners' internalization of skills taught.

Methods, Materials and Resources used: Participants included all first year medical/PA students in a large US academic medical college. We implemented a stepwise approach to communication skills teaching that minimized use of large group lectures while increasing small group activities, simulated patients (SP) and facilitators trained in communication models, and clinical experiences. Our approach included:

1) Lectures/demonstrations covering core skills;

2) Observation and practice of the specific skills in a clinical setting;

3) Critical analysis/reflection on the clinical experience;

- 4) Small group practice of skills with an SP and facilitator;
- 5) One to one interview with an SP who gives feedback on skills;
- 6) Student review and analysis of one to one interview video;
- 7) Review and feedback from facilitator to further refine communication skills learning goals.

For each set of basic communication objectives (Getting the patient's story, eliciting the history of present illness, interprofessional communication, responding to patient emotions, getting the patient's background history, review of systems), the same stepwise process was repeated. At the end of each step, based on practice and feedback, students identified communication strengths and skills to improve. These goals helped guide each student's work in subsequent sessions.

Outcomes : Qualitative data was obtained on student perceptions of this training model. Feedback included appreciation of pacing, development of skills and activities to allow real changes to occur. Preceptor feedback also noted more advanced skills in interviewing techniques earlier in student's training.

Strengths and Areas for Improvement: Strengths included more advanced communication skills allowing students to start interviewing patients early in their training. Development of skills to begin working with emotional patients and use of empathy skills was noted. Areas for improvement included identifying variations within facilitators and modifying skills is important. Use of grading scales should be judicious for most effective feedback to be internalized.

Feasibility of Program Maintenance/Transferability: This model is easily replicated outside of our institution. Challenges may include cost of SP use and training and scheduling of SPs and student/facilitator groups.

70. Introduction of an Interprofessional Education Activity into Five Colleges of Health Professions

Anthony Brenneman, University of Iowa Carver College of Medicine

Objective/Purpose: Where and how to add Interprofessional Education (IPE) into an already packed curriculum.

Need for Innovation/Practice: IPE is now an accreditation requirement in all schools of health education. With this is a push to add curriculum to an already full schedule. Challenges include identifying participants and time for activities, space, facilitators, and methods of delivering the material, and follow-up after events.

Methods, Materials and Resources used: Five schools of the health sciences and seven professions met for an in person launch of a new IPE curriculum involving first year students in their first weeks of class. Over 500 students were placed in 63 multidisciplinary teams, provided pre-reading and were asked to assist their teammates in providing care to a patient over the next 18 months. The student healthcare teams met their "patient" during this in-person meeting and then received virtual and in-person updates over the 18 months, requiring the team to develop a plan based on updates received. At the beginning of the second semester students met in-person with a small group facilitator to discuss areas of learning shared by each profession, knowledge and skills gained, and new insights gathered in working collaboratively with their patient. In the third semester groups met in-person at the end of the course to discuss lessons learned, opportunities created and opportunities missed that each profession will manage when they are in practice.

Outcomes : Qualitative data was obtained on student perceptions of this training model. Common themes included:

The importance of communication

The need for collaboration despite being busy

Importance of understanding what each member of the team does

Each member of the healthcare team is important

Challenges that are associated with teams

Strengths and Areas for Improvement: Writing IPE into an existing course in each profession facilitates ease of transition/addition of materials. Students rate in-person activities higher than virtual experiences.

Timing of events is critical so that students don't feel this is an "add-on" or "less important" activity. Identification of faculty leaders in each professional school is required in order to get buy in and have ongoing support of the activities.

Feasibility of Program Maintenance/Transferability: This model could be replicated outside of our institution. Challenges include location of adequate space for both large and small group experiences. Costs associated with sound, food, and support staff needs may also pose challenges.

71. Use of progressive in situ simulation to promote multidisciplinary teamwork during pediatric difficult airway management

Tensing Maa, Ohio State University College of Medicine

Objective/Purpose: Design and assess a multidisciplinary simulation-based advanced airway management course to instill a common skill set and knowledge base across subspecialties and demonstrate the importance of communication and teamwork.

Need for Innovation/Practice: Emergent pediatric critical airways are co-managed by multiple subspecialists and successful care requires complex handoffs and multidisciplinary collaboration. Multidisciplinary educational programs are needed to prepare trainees to provide the integrated care that is required for their professional careers. Simulation-based airway courses are typically single specialty and do not occur in the actual clinical environment. Training in the native work setting (in situ) combines the physical fidelity of the environment with functional fidelity of content (what to do) and context (how to do it) in one educational session.

Methods, Materials and Resources used: Trainees from Anesthesia, Emergency Medicine, Critical Care, Otolaryngology and Surgery participated in a one-day workshop consisting of lectures, skills stations, case discussions, and progressive in situ simulation scenarios. Simulations occurred in the actual clinical environment (e.g. operating room) and utilized real medical equipment (e.g. rigid bronchoscope). Small groups were multidisciplinary to promote teamwork. Pre- and post- workshop questionnaires were completed and non-parametric signed rank tests were used to compare an individual's scores. A 6-month follow-up questionnaire was administered to assess retention of knowledge and skills and transfer of these to real patient care.

Outcomes : 26 trainees, ranging post-graduate years 2-10, participated. Increased pre-to post-course confidence with advanced airway technical skills was significant ($p < 0.05$). Recognition of a difficult airway and non-technical skills including leading a resuscitation team and effective communication with other disciplines was significantly improved ($p < 0.05$). All trainees agreed/strongly agreed the multidisciplinary format helped develop team communication skills and 96% preferred it to single discipline training. At 6 months, all participants had been involved in management of at least one patient with a difficult airway and 90% agreed/strongly agreed the course positively impacted their care.

Strengths and Areas for Improvement: A multidisciplinary educational course to teach advanced airway management, teamwork and communication skills is effective, preferred by learners, and possible to achieve despite challenges of scheduling and training differences. This format highlighted unrecognized knowledge gaps between disciplines and emphasized the benefits of collaboration. Additional workshop follow up is needed to better assess translation of skills to individual and team practice changes in real patient care.

Feasibility of Program Maintenance/Transferability: The workshop has occurred over 2 consecutive years and will be integrated into the trainees' curriculum.

72. Self-Reflection, Self-Determination Theory, and the Millennials: A Multi-Disciplinary Workshop on Student Engagement During Clinical Rotations

Jill Wener, Rush University Medical Center

Objective/Purpose: We created a two-hour faculty development workshop on 'Student Engagement During Clinical Rotations'. Our purpose was to facilitate self-reflection upon personal strengths and areas for growth regarding student engagement, apply strategies for student engagement to multiple clinical settings, and adapt teaching methods according to results of student evaluations.

Need for Innovation/Practice: Of the multiple challenges faced by clinical teaching faculty, student education is one of the most difficult responsibilities to maintain during hectic clinical schedules. However, student perceptions of and experiences during their clinical rotations are greatly impacted by how involved they are with patient care and the medical team. As a result, teaching evaluations often reflect the degree to which attendings engage their students. We designed a 2-hour faculty development workshop for clinical faculty to explore their own teaching practices and to provide practical and efficient ways to improve the experiences of their medical students.

Methods, Materials and Resources used: Teaching faculty from Internal Medicine, Pediatric surgery, Pediatrics and Emergency Medicine collaborated to create a workshop catered to clinical faculty. Based on comments taken directly from attending teaching evaluations, we noted that most negative comments reflected a lack of effort to involve and engage students, causing students to feel ignored, underappreciated and unmotivated. We geared the workshop towards hospital-based clinicians, who often have limited ability to attend daytime faculty development activities. We invited clinical faculty from all medical specialties, and several non-medical faculty also responded to hospital-wide advertisements for the workshop. Participants received 2 hours of free CME, as well as free dinner.

Outcomes : Faculty from 14 specialties and subspecialties, from both our hospital and our sister county hospital, as well as faculty from several non-medical disciplines, attended the workshop. Our curriculum included multiple self-reflection exercises drawing upon the group's experience as well as a 'self-assessment wheel' based on our institution's faculty evaluation process. Our didactics focused on self-determination theory and millennial learners, both applied to clinical medical education.

Strengths and Areas for Improvement: Strengths include the collaborative nature of the workshop. Teaching faculty from a wide range of clinical departments interacted and learned from each other's experience and expertise. In addition, self-reflection exercises allowed a deeper connection to the workshop content. The cost for CME was significant, but is inclusive of future faculty development workshops. There is very little in the literature that specifically addresses student engagement in clinical medical education, so we compiled workshop content from articles on several different topics, as well as faculty expertise.

Feasibility of Program Maintenance/Transferability: Other than the cost of CME and dinner, the workshop itself required very few resources. Our content is easily adaptable to other institutions, as well as non-medical departments such as nursing, respiratory therapy, physical and occupational therapy, and physician assistant programs.

73. Identifying M1-2 Preceptor Development Needs at a time of Health Care Transformation

Tara Petersen, Medical College of Wisconsin

Objective/Purpose: To obtain a national perspective on the most useful tools/resources to support preceptors who teach M1-2 students in their clinical setting.

Need for Innovation/Practice: Longitudinal clinical placements for medical students during their first year of training are common among current medical school curricular redesigns. Clinical preceptors are familiar with supporting M3-4 students during clinical rotations. However, teaching early clinical learners (M1-2 students) who have limited clinical skills can be challenging, particularly with escalating expectations for patient volume/value including high quality patient experience (e.g., Press Ganey) and care outcome measures (e.g., Centers Medicare/Medicaid Service [CMS] metrics). Recent literature (2010-present) provides little guidance to support tool/resource development specific to preceptors working with early clinical learners in today's clinical practice environment. Therefore, a national perspective was sought to inform preceptor development strategies and resource tool design.

Methods, Materials and Resources used: Based upon conversations with local preceptors and colleagues, participants in a longitudinal master educator faculty development program developed a brief semi-structured interview tool to gather data from educators attending the AAMC's 2014 Innovations in Medical Education exhibits. Participants served as interviewers recording respondents' answers using a secure SurveyMonkey® template with question areas including: (1) Teaching roles with M1-2 students in clinical setting; (2) Most useful tools/resources to support preceptor; (3) Most challenging reason(s) not to precept. Respondents were individuals who expressed interest in the topic by stopping at an exhibit

focused on preceptor teaching development.

Outcomes : Fifty interviews were recorded by seven different interviewers. 52% of respondents held senior leadership role (assistant, associate, dean, course/clerkship director), 35% taught M1-2 students in the clinical setting, and 12% were clinical preceptors with no experience teaching early clinical learners. The most useful tools/resources identified to support preceptor teaching were in rank order: Learning best practices from other M1-2 preceptors; checklists; pre-visit planning; setting day's agenda using a template focused on value added; and pre-certification of student's competence. Major challenges were time, money, and clinical productivity expectations.

Strengths and Areas for Improvement: Findings from our national convenience sample of educators interested in preceptor development were congruent with local preceptor input, and will be used to guide preceptor development strategies and tools. Identifying strategies where early medical students can add value and be efficient remain as challenges to be addressed.

Feasibility of Program Maintenance/Transferability: This national needs assessment data can be further validated with local preceptors to inform the design of tools and strategies to support M1-2 preceptors striving to meet added value and efficiency challenges as they meet students' clinical education needs.

74. Redesign of the Fourth Year: Emphasizing the Continuum from Medical School to Residency.

Abbas Hyderi, University of Illinois at Chicago College of Medicine

Objective/Purpose: There are few accreditation requirements for fourth year of medical school (M4 year) and there is significant variety across medical schools regarding the M4 curriculum which is often lacking a balance of flexibility and career guidance. We conducted a rigorous needs assessment of the M4 year and identified educational breadth and depth as our goals, with flexibility and guidance as guiding principles. We designed a new M4 curriculum based on a Pathway system, analogous to the ACGME categories of residency training programs: Hospital-based, Medical and Surgical. Students choose one of the three Pathways. Each Pathway consists of four 4-week experiences tailored to enable students to focus these sixteen weeks on individual career goals, based on chosen residency specialty. All Pathways have specific requirements based on published recommendations and input from Residency Program Directors. All students are required to take a one month Transition Course, consisting of three courses preparing students for post-graduate training which include a course in lab medicine, a course in advanced medical knowledge and systems and a longitudinal career development course.

Need for Innovation/Practice: The UIC faculty and students were unhappy with the M4 year which consisted of a 17 week "Specialty Course" consisting of eight 2-week and one 1-week specialty experience. We determined that we needed to maximize opportunities to focus training complementary to career preparation, provide flexibility and to improve the ability of advising services to guide students in M4 scheduling.

Methods, Materials and Resources used: We conducted a literature review regarding the current gaps in the M4 curriculum. We involved key stakeholders in planning the pathway system including Undergraduate Medical Education staff, Student Affairs staff, students, Department of Medical Education faculty and clinicians. In addition we surveyed students, graduates, faculty and administration regarding the UIC M4 Curriculum.

Outcomes : If the M4 year is to continue, schools must emphasize the continuum of medical education, from undergraduate to graduate to lifelong learner. Educational breadth and depth can be achieved with a structured, yet flexible approach, as demonstrated by our curricular design. Full implementation of the redesign occurred in June 2014. Initial feedback from students and faculty is that the M4 redesign is well received and achieving its stated goals of offering flexibility and career guidance. We have had few students requesting changes between pathways and at a mid-point review students are on track to complete their M4 requirements.

Strengths and Areas for Improvement: Strengths: We have clearly identified for students pathway electives and career elective requirements to help students attain their career goals.

Areas for Improvement: We realized that we may have an issue with the Transition Course block in October because it falls during interview season for M4 students. We determined that the fall is very busy

for students and we need to advise students on how to best manage their schedules in order for them to complete course requirements for graduation.

Feasibility of Program Maintenance/Transferability: The M4 curriculum redesign at UIC was approached with a careful eye towards processes and procedures to insure that the pathway system and course requirements can be easily maintained and occur each year. Some of the steps taken to insure that M4 curriculum redesign continues includes: full curricular governance and university approval process of the redesign, securing internal and external resources including staffing and funding and rigorous evaluation of the redesigned curriculum. The M4 redesign could be replicated at another institution because of its broad appeal being grounded in the ACGME's Milestone project that designates residency training programs into three distinct categories and it incorporates ACGME Level 1 milestones in its Transition Course block.

75. Innovative Multimodal Approach to Teaching Principles of the Patient Centered Medical Home

Laurie Belknap, The Ohio State University

Objective/Purpose: To demonstrate an innovative and multimodal approach to teaching patient centered medical home concepts and clinical skills to medical students. ELearning modules that incorporate virtual patients and an electronic medical record (EMR) learning environment are used to teach skills to prepare medical students for the Patient Centered Medical Home (PCMH) model of healthcare delivery.

Need for Innovation/Practice: The PCMH model of healthcare delivery has changed the way physicians interact with patients. In clinical encounters, training medical students in PCMH concepts, such as team-based care and informatics can prove challenging.

Methods, Materials and Resources used: A set of modules has been created that utilizes various teaching methods: 1) an Articulate presentation introduces clinical content and evidence-based resources for continued student learning, 2) virtual patients are used to teach interviewing and history-taking skills, and 3) a learning environment that mirrors the Epic EMR is used to teach informatics skills. Each module focuses on 1-3 of the most common chief complaints seen by primary care physicians. PCMH principles are linked to this content, explained, reinforced, and highlighted throughout the patient case. Copies of the patient medical record are created in the Epic learning environment to provide a unique patient for each student. The module also contains a formative quiz to reinforce student acquisition of knowledge of both clinical content and PCMH principles.

Outcomes : Up to this point, qualitative feedback from students has been neutral to positive, with some negative comments regarding ease of use issues. Students in the neutral to positive category enjoyed the learning, liked the materials organization and the ability to practice charting and interviewing. Negative comments were mainly about glitches that are currently being fixed. A few students thought they already had enough practice and felt the module is better-suited for younger students.

Strengths and Areas for Improvement: The value of this method continues to grow. Based upon student feedback received, further module refinement has focused on enhancing teaching of PCMH principles and documentation skills as well as improved system access, enhanced evaluation feedback, clarified instructions for navigation, and technology support.

Feasibility of Program Maintenance/Transferability: Institutional support has been secured for continued maintenance of this training approach. This format has implications for other schools in the creation of multimodal teaching cases, such as use of the virtual patient interaction as a teaching tool. Virtual patients are standardized and can be customized to deliver consistent data efficiently and cost effectively across learning locations. Virtual patients allow asynchronous use and promote self-direction for learners and flexible faculty time for evaluation.

76. **WITHDRAWN** Development and Pilot of a Discharge Curriculum for First-Year Residents

Bruti, Christopher, Tsai, Christine, Maganti, Jansi, Rush University Medical Center

Objective/Purpose: Effective coordination of care within and across healthcare delivery systems is a national patient safety priority and an important competency for Internal Medicine residents. Residents are expected to work in teams and transmit clinical information that ensures proper transition of care between

health care settings. Our goal was to develop and pilot a curriculum to teach first-year Internal Medicine residents at a tertiary care academic hospital how to effectively discharge patients.

Need for Innovation/Practice: Current evidence suggests that residents often do not receive and would like formal education on how to appropriately discharge patients.

Methods, Materials and Resources used: In spring 2014, we interviewed case managers, nurses, pharmacists, residents and faculty for topics and tips essential in teaching interns the discharge process. We then created an innovative curriculum outlining our institution's multidisciplinary approach to discharge planning that highlighted the intern's role. We encouraged interns to understand the patients' discharge needs from time of admission and throughout hospitalization, emphasizing the importance of creating a safe, personalized, and effective plan. We also developed a teaching handout organized as a timeline. Beginning July 2014, we presented our curriculum monthly to new interns starting on the general medicine floor, timing the class to maximize applicability.

Outcomes : We conducted five sessions and administered a survey immediately after the lecture, surveying 56 Interns in total. 41 ranked the session helpful, 15 somewhat helpful. None ranked it neutral or unhelpful. On qualitative analysis, the most helpful aspects included providing a framework for preparing discharge, teaching the importance of medication reconciliation, and distributing a handout for future reference.

Strengths and Areas for Improvement: Strengths of the curriculum included its comprehensive nature and its emphasis on discharge planning throughout the stay using a patient-centered approach. All interns surveyed recommended the curriculum be given to future interns. Several interns thought the sessions would benefit from specific images of the electronic medical record discharge screens.

Feasibility of Program Maintenance/Transferability: We believe that our curriculum provided our interns with tools to safely and efficiently discharge patients and that it can easily be adopted by other programs interested in providing formal education on the discharge process.

77. The University of Toledo Interprofessional Immersive Simulation Center: A Paradigm Shift in Medical Education

Sinewe, Marcus, Whaley, James, Haraf, Rebecca, Sebolt-Martin Amanda, University of Toledo College of Medicine

Objective/Purpose: Our poster describes the efforts of the University of Toledo to create an immersive clinical skills center integrating modern tools for targeting avoidance of medical errors with low-risk simulation scenarios. Identified through this program is the need for medical schools to invest heavily in creating such realistic simulation environments.

Need for Innovation/Practice: During the 21st century, complex tools and resources for simulation of clinical medicine have slowly become a building point in medical education. As these tools have become realistic "multiple studies have demonstrated the effectiveness of simulation in the teaching of basic science and clinical knowledge, procedural skills, teamwork, and communication as well as assessment at the undergraduate and graduate medical education levels" (Okuda, et. Al 2009). Investment and dedication to developing in-depth simulated experience environments is the next major step in tackling avoidance of medical error early in medical education.

Methods, Materials and Resources used: The University of Toledo has begun creating next generation simulation through the development of the University of Toledo Interprofessional Immersive Simulation Center (UT-IISC). The UT-IISC, opened officially in April of 2014, was made with the vision of creating a transformative learning environment for interdisciplinary education, advancement of clinical practice, and improvement of human performance. The UT-IISC model of education is known as the "Tri-Center Concept" which incorporates virtual immersive reality, advanced clinical simulation, and progressive anatomy and surgical skills. The ultimate goals of the Tri-Center Concept are to improve medical outcomes and quality of care, to reduce healthcare costs, and to foster team-centered patient care.

Outcomes : The UT-IISC is already being utilized in many different capacities in its first year of service. The Interprofessional Approach to Patient Care Course included 552 students from 8 health science professions and allowed for team-based simulation experiences in vital sign training, patient interviewing, and identification of patient safety issues. An educational partnership with the 711th Human Performance

Wing of Wright Patterson Air Force Base has allowed for Live Virtual Constructive Exercises with local SWAT and USAF Para Rescue Jumpers. The UTIISC was also used to help prepare Toledo healthcare workers for the potential of a local Ebola outbreak, including training video creation, process improvement, and practice of basic Ebola treatment. Outcomes were measured with the use of fluorescent powder to simulate contamination.

Strengths and Areas for Improvement: Strengths of this center include the versatility and broad capabilities of the Tri- Center Concept to offer a wide variety of clinical scenarios, and the vast physical space allowed for cross-discipline training and interaction. This combined has allowed unparalleled pre-clinical team-based training.

Weaknesses include the monetary investment needed for center development and low statistical outcome measurement due to how new the program is.

Feasibility of Program Maintenance/Transferability: The UT-IISC provides an environment for all members of the healthcare team to safely practice and develop skills important to effective team based medicine. Development of centers that can provide immersive clinical simulation is vital to preparing students, residents, and all members of the healthcare team for numerous different situations that could arise in clinical practice. Centers with these capabilities involve major monetary backing, but present absolutely necessary tools which medical schools can utilize to invest in the development of their students and staff, and within the healthcare of their communities.

78. The CommunityCare Free Medical Clinic: Interprofessional Collaboration in a Student-Run Free Clinic, *Chris Marino, University of Toledo College of Medicine*

Objective/Purpose: Interprofessional collaboration is increasingly recognized as an integral component of quality healthcare and student education in the health disciplines. Student-run free clinics are uniquely positioned to be environments where students have the opportunity to collaborate on an interdisciplinary team, practice principles of public health, and interactively explore the role of other professions through service-learning.

Need for Innovation/Practice: Interprofessional collaboration has been shown to improve patient outcomes, quality of care, and provider satisfaction. Stronger efforts are needed to equip students with collaborative skills early in their training.

Methods, Materials and Resources used: The CommunityCare Free Medical Clinic (CCFMC) is a student-run free clinic dedicated to providing healthcare with dignity for the uninsured of Northwest Ohio. Originally founded in 2010, it has endeavored to address the multi-faceted needs of its patients through comprehensive services. To achieve these goals, CCFMC has united students and healthcare providers from diverse disciplines toward a common vision of translating interdisciplinary teamwork into enhanced patient care. These disciplines include: medicine, pharmacy, nursing, physician assistant, occupational therapy, physical therapy, respiratory therapy, and social work. Prior to volunteering, students participate in an intensive inter-disciplinary training session. At CCFMC, students are assigned interprofessional teams of two or three to collaboratively triage, interview, and accompany patients through their visit. Students also have the opportunity to shadow a diversity of healthcare providers to achieve a more complete understanding of each professions' role in the health team.

Outcomes : This model promotes an exchange between disciplines, and challenges students to expand their perspective of care. The clinic provides students a unique experience critical for professional development that sets the foundation for stronger collaboration throughout students' careers. An evaluation tool to assess the impact of participation on student satisfaction and interprofessional competence is in development.

Strengths and Areas for Improvement: The integration of diverse health services has required a more complex clinic structure and has necessitated modifications in patient flow to optimize clinic efficiency. While this transition has been a challenging step for the student organization, designing and initiating a more streamlined interprofessional model has been a valuable student learning experience. An interdisciplinary precedent has been set at the CCFMC. The next steps will be to refine its interactive structure and continue to incorporate interprofessional dialogue and team processing.

Feasibility of Program Maintenance/Transferability: Student-run free clinics can be tailored to

participating institutions and programs. Existing interprofessional education initiatives at institutions can reinforce structure and allow more synergistic potential.

79. The Use of Small Group Learning Activities in a Neuroscience Laboratory to Foster Life-long Learning Skills

Bruce, Giffin, University of Cincinnati College of Medicine

Objective/Purpose: Brain, Mind, and Behavior is an integrated second-year neuroscience course. The goal was to increase opportunities for small group interactive learning in the context of the laboratory component of the course that would encourage students to become more active learners and foster life-long learning skills.

Need for Innovation/Practice: Interactive learning techniques validate different learning styles and foster critical thinking skills. The use of interactive formats (1) encourage students to assume responsibility for their learning, (2) stimulate student-to-student and faculty-to-student interactions and, (3) give students the opportunity to develop communication skills.

Methods, Materials and Resources used: The laboratory was restructured to include interactive small group activities structured as an open classroom, which divides the time and space of the laboratory enabling different types of activities to occur simultaneously. These activities include gross neuroanatomy exercises involving cadaveric specimens, focus questions for group discussion and consensus, neuroimaging exercises designed to develop the skill needed to interpret CNS structures using plain film radiography, angiography, and tomographic imaging modalities, microscopic neuroanatomy exercises using image banks to examine the internal structure of the brain and spinal cord, and clinical application cases. Clinical application cases are distributed to the small groups near the end of the laboratory session. These are designed to develop critical thinking skills that will lead to a consistent, methodic approach to clinical problem solving, and the interpersonal skills needed to work together in a team approach to problem solving.

Outcomes : Learning in the laboratory is accomplished mainly through personal discovery, group discussion with other students, and small group/individual interactions with the laboratory instructor. The restructured laboratory has been enthusiastically received by the students and the faculty as determined by formal course evaluations and anecdotal feedback. Laboratory instructors consistently report excellent working relationships among members of the small groups. Students consistently raise insightful questions and relate previous knowledge to new information in unique and different ways.

Strengths and Areas for Improvement: Interactive learning techniques engage the student in learning activities requiring the use of higher order thinking skills of analysis, synthesis, and evaluation. The laboratory has been demonstrated to be essential for students to do well in this course. Because of the open-endedness of many of the activities, many of the labs could use more time in the schedule.

Feasibility of Program Maintenance/Transferability: The program has been maintained for a number of years. Transfer of this program to another school could be accomplished easily.

80. Team Based Learning Experiences Admissions Recruitment of Medical Students

Austin, Chris, Central Michigan University, Grabowski, Christina, Oakland University

Objective/Purpose: Expose students to our Team-Based Learning (TBL) modality to give them a better picture of active learning in our curriculum. TBL exposure also provides a better understanding of group/team dynamics and the role it plays within our curriculum. Incorporating a mock-TBL session in the admissions cycle provides students with information and experience with which to make a sound decision for student-school fit.

Need for Innovation/Practice: Classroom pedagogy and modalities are in a state of change in medical education. Providing a TBL experience on interview day or during a second look visit helps students decide if they want to participate in this style of active learning. Some students may shy away from group learning based on undergraduate group project experiences. Team-Based Learning is very different. Actually experiencing this technique may alleviate concerns future students have about group work.

Methods, Materials and Resources used: Including a TBL session on an admissions day involves

having the appropriate space for individual teams to meet within one large space for both small and large group interactions. TBL also requires a trained facilitator, written materials for applicants to read about a topic to be discussed, TBL course materials (signs, scratch cards), and enough time to complete the activity. At OUWB, one hour is allotted for TBL on interview days and at CMED, one half hour is allotted for TBL overview and one hour for a mock TBL session during the Second Look Day program.

Outcomes : Student feedback via survey tools is collected after interview and second look day programs. Students provide positive feedback about the inclusion of TBL and its impact on their impression of the medical school.

Strengths and Areas for Improvement:

Strengths: Transparency, Alleviation of concern about group work, Importance of group/team dynamics

Areas of Improvement: Possible changing of topics, Potential reduced time

Feasibility of Program Maintenance/Transferability: Time commitment, Interest by students, Availability of trained facilitators

81. Medical Students for Choice provides critical reproductive health training opportunities

Miquia Henderson, Washington University School of Medicine

Objective/Purpose: Since its beginning, Medical Students for Choice (MSFC) has been a student-driven, grassroots organization. The organization pursues its mission by engaging medical student activists in strategies to educate their peers on clinical issues and practices related to contraception and abortion. MSFC has over 150 chapters in the US and Canada whose members provide educational opportunities directly or in collaboration with faculty to add topics on contraception and abortion to medical school curriculums.

Need for Innovation/Practice: One out of every three American women will have an abortion by the age of 45. This suggests that nearly every physician practicing in the US will encounter a patient who has had or who will have an abortion. Therefore, abortion is an integral part of the Ob/Gyn curriculum. Although the Association of Professors of Ob/Gyn has recommended that abortion be covered in medical school education since 1997, some medical students are still graduating with neither preclinical nor clinical exposure to abortion education. A 2005 survey of Ob/Gyn clerkship directors found that 17% of respondents indicated that their Ob/Gyn curriculum offered no formal education about abortion. In the third-year clinical Ob/Gyn rotation, only 32% of respondents' programs offered a lecture that was specifically about abortion.

Methods, Materials and Resources used: Chapters organize a range of educational events on abortion and contraception at medical campuses. These include lectures on the pharmacology of contraception and medication abortion, procedure workshops (IUD insertion, no-scalpel vasectomy), and panel discussions. Members often recruit residents, fellows, or faculty to lead these events. Through MSFC's network, chapters collaborate with each other, sharing syllabi, as well as organizing and advocacy strategies.

Outcomes : MSFC chapters annually organize over 1,200 educational events on more than 150 medical school campuses. In addition, the organization trains and supports medical student members on curriculum change methodologies. Through these two strategies alone, MSFC reaches over 10,000 medical students every year with both formal and elective curriculum content related to contraception and abortion. By treating student organizing efforts and curriculum change work as two interwoven strands of grassroots-driven medical education, MSFC creates opportunities for student-driven learning. Students participating in MSFC-designed lectures demonstrate 20% improvement in mastery of content from pre- to post-test.

Strengths and Areas for Improvement: Students at 75% of North American medical schools participate in MSFC. There is clear interest from medical students in accessing reproductive health curriculum. Some institutions have indicated reluctance to allow chapters to organize on their campuses or participate in curriculum design; this may reflect a fear of controversy. Nine medical schools in the Midwestern US do not have MSFC chapters; lack of faculty and administrative support is a major barrier to students organizing chapters, hosting educational events, and participating in curriculum change related to reproductive health.

Feasibility of Program Maintenance/Transferability: MSFC has already spread to most campuses in North America. Resources for starting a chapter are well-established, as are resources for curriculum change.

82. WrightQ: Broadening Integration of Competencies in Case-Based Learning

Sabrina Neeley, Wright State University

Objective/Purpose: To present patient cases developed for small group, self-directed learning sessions that broaden integration of competencies for medical student education.

Need for Innovation/Practice: The need for broader integration of biomedical science, clinical practice, population health, and prevention was identified, as well as increasing students' familiarity with health conditions commonly seen in primary care.

Methods, Materials and Resources used: Faculty developed eight patient cases, representing common health conditions. The process was modeled after the Case Western Reserve CaseIQ format, with two unique additions: (1) building health profiles for members of a multi-generational family so students begin to recognize biopsychosocial risk factors for certain diseases; and (2) prompting students' consideration of disease prevention, preventive services, and clinical practice guidelines. A pilot of these case discussions was conducted in 2013-14 with a select group of 9 MS-1 and 9 MS-2 students. Original cases were refined, new cases added, and a better realignment of cases with curriculum allowed for scalability to all 104 MS-2 students in 2014-15.

Outcomes : Students in the pilot indicated higher levels of confidence in their ability to integrate basic science and population health issues related to a patient case, as well as higher confidence in their ability to identify information needs, problem-solve, and self-direct learning.

Strengths and Areas for Improvement: Students in the current year demonstrate greater attention to identifying opportunities for disease prevention, and are purposefully searching for and discussing clinical practice guidelines and recommendations for preventive services related to the patient in the case. Student groups recognize the familial relationships in the cases and are considering information across cases as it relates to health risks and protective factors.

Areas for Improvement: (1) Long periods between sessions result in some students delaying preparation until one or two days prior to the session; (2) Variation in learning curves between different groups; (3) Student dissonance between "learning how to learn" and "learning what's important for board exams;" and (4) Development and refinement of evaluation and feedback processes.

Feasibility of Program Maintenance/Transferability: These cases can be used in subsequent years with few modifications. The addition of two facilitator probing questions, "How could [this patient's] current health issues have been prevented?" and "What preventive health measures does [this patient] need at the current time?" required only one or two prompts before students began to recognize that they should consider these questions in every case. These questions can be easily added to almost any patient cases developed for student discussion and self-directed learning.

83. Developing an Online Information Mastery Course to Foster Medical Students' Lifelong, Self-Directed Learning

Misa Mi, Oakland University William Beaumont School of Medicine

Objective/Purpose: Lifelong learning is considered to be an indicator of professionalism and recognized as an obligation for healthcare professionals. Information literacy forms the basis for lifelong learning. It initiates, sustains, and extends lifelong learning through a set of skills such as identifying one's own knowledge gaps, seeking and critically evaluating information, and use it at the point of needs. These skills are necessary for lifelong learning. One LCME standard requires that a medical education program include instructional opportunities for active learning and independent study to foster the skills necessary for lifelong learning. It places a great emphasis on development of information skills by medical students. The poster will demonstrate how an online information mastery course is developed as an intervention to develop medical students' proficiency in information mastery and foster their lifelong and self-directed learning.

Need for Innovation/Practice: Web-based online information skills instruction can reinforce or complement what students learn in a classroom setting. Existing online information skills instruction on the library website of the author's institution is nothing more than text explanations delivered technologically through the web. This kind of web-based learning is expository with much of it in the form of page turning without true engagement built into the instruction design. Learners simply read texts from a screen of the website, which would not likely stimulate a higher level of learning interest and promote active and interactive learning.

Methods, Materials and Resources used: The online information mastery course encompasses multimedia modules hosted in eSpace, a Moodle server reserved for special academic projects at a university. The modules complement the information mastery content that is currently being taught within limited contact hours in the medical curriculum of a new medical school. The principles of multimedia learning are applied in developing the modules to maximize the outcomes of self-directed learning. Learning activities created for the course promote learner interactive, active learning. Self-assessment measures are embedded to provide formative and summative evaluation of students' independent and self-directed learning.

Outcomes : The ultimate goal of designing the online course is to integrate appropriate course content and modules into a number of basic sciences courses in the medical curriculum in Moodle to enhance students' information skills and self-directed, lifelong learning within the context in which students learn discipline-based and clinical knowledge and skills.

Strengths and Areas for Improvement: Medical students' use of the course materials will be monitored in e-Space. A usability test of the online course will be conducted with one cohort of medical students (5-8) to investigate how they use and navigate the online course. Follow-up focus group interviews will be conducted to gather information about students' reactions and opinions about the course and to seek their feedback and suggestions for improvement on the course content and design.

Feasibility of Program Maintenance/Transferability: The online course as a self-directed, lifelong learning intervention provides students with autonomy and flexibility in learning information skills and self-assessing learning needs and outcomes. It is designed as a scalable and distributed online training intervention. It has potential for use as a learning tool by nursing students and other learners across the spectrum of medical education to gain important skills for evidence-based practice and engage in lifelong and self-directed learning.

84. Accelerating Sterile Field Education in Novice M3's: Utilizing 3D Camera Technology in Virtual OR Sims, *Gerald Wickham, University of Illinois College of Medicine at Peoria*

Need for Innovation/Practice: In addition to prevention of surgical site infection, a key dynamic in novice medical student sterile breaches are interprofessional in nature – nursing staff are called to correct and mitigate errors. Our utilization of 3D Camera technology in a virtual OR simulation aims to accelerate sterile field knowledge and practice, in addition to mitigating negative interprofessional encounters.

Methods, Materials and Resources used: During a three minute simulation pairs of novice M3's were invited into the virtual operating room at Jump Simulation Center where they encountered a surgeon and perioperative nursing staff. Students had previously correctly "scrubbed-in" as well as learned appropriate gowning and gloving procedures. In the virtual OR they assisted in gowning and gloving and were given directions from the surgeon to ostensibly observe a procedure. The surgeon issued directions to the students, effectively inviting them to touch the "blue space" and later to switch sides of the table, thereby altering their vantage points. These two actions while simple are commonly encountered by medical students during their surgical clerkships and pose an opportunity for breaches and interprofessional error mitigation. 3D camera data captured breaches of sterile field which was used by the perioperative team to display and debrief the learners on their successes and failures.

Outcomes : The three aspects of this training methodology rated very favorably in student evaluations. Gowning/gloving received 4.37/5 (SD 0.72), OR Simulation 4.4/5 (SD 0.57) and 3D Camera Debrief 4.32/5 (SD 0.68). Given the novel use of the 3D data we are encouraged about this feedback mechanism. Additionally, we are currently reviewing the 3D error data to establish an approximate cost-avoidance figure. For each error in the data-set we assign a dollar cost, and by capturing the error cost for the entire M3 cohort as novices this number can be used as a baseline approximation of novice error cost in the OR,

and is an effort toward downstream cost-avoidance.

Strengths and Areas for Improvement: One area for improvement is to develop additional feedback tools for the learning experience. In our pilot we focused on the 3D camera data as the source of feedback to the learners. Although discussion of these data implicitly addressed some interprofessional intra-OR dynamics, we aim to include a 360-feedback form which will provide the learner with additional feedback from the perioperative nurses.

Feasibility of Program Maintenance/Transferability: 3D camera technology offers an efficacious and rapid method to accelerate sterile field education, while augmenting adaptive and positive interprofessional dynamics across the perioperative team. Our innovation demonstrates that 60 novice M3's can be trained over the course of 4 hours in a streamlined developmental system, with immediate feedback loop and real 3D data.

85. Comparing the outcomes of two versions of a faculty development course--blended and self-paced--for geographically dispersed medical school faculty

Deborah Sleight, Michigan State University

Objective/Purpose: The purpose of this innovation is to test a format for faculty development that will be satisfactory and effective for faculty dispersed around the state.

Need for Innovation/Practice: Our medical school is community-based in six campuses throughout the state, making faculty development difficult. We have tried various formats of instruction but attendance and use of each method has fallen off. In a recent needs assessment faculty indicated they wanted face-to-face instruction, but did not have time to travel for it, and their clinical schedules made it difficult to meet at set times. We think a blended form of instruction might be helpful. Self-paced training can be taken where and when it is convenient for faculty, and communication and feedback from instructors and peers might motivate faculty to complete the course.

Methods, Materials and Resources used: For this five-week blended course we will recruit several faculty who meet the prerequisites. The participants will watch instructional videos in the online self-paced tutorial. They will download worksheets, complete them, then send them to the instructors for feedback. We will hold three group videoconferences throughout the five weeks: orientation, peer review of assignments, and presentation of completed projects.

We will open the self-paced course to faculty who want to take it on their own, without communication with peers or instructors, and will compare their satisfaction with those in the blended course. The resources are all electronic: the self-paced tutorial, worksheets, email and videoconferencing software. The videoconferencing software is free to our faculty. We estimate the total time required for participants will be 21 hours over the five weeks.

Outcomes : By the end of February 2015 we expect to learn how satisfied faculty were with the format of the course, how many completed the course and assignments, how effective the course content and presentation was, and how this blended format might be improved to be the main format for presenting faculty development training.

Strengths and Areas for Improvement: We will identify the strengths and areas of improvement through surveys and interviews of the participants.

Feasibility of Program Maintenance/Transferability: It is feasible to maintain this program because we already have the self-paced tutorial (developed at our medical school) and we have the hardware, software and instructors needed. To create another self-paced tutorial will take some time, but with the information from the first implementation of the blended format, we should be able to speed up development. This program format could easily be transferred to other schools if they provided the self-paced tutorial.

86. Required Pathology/Radiology Clerkship

Amira Gohara, University of Toledo Medical College

Objective/Purpose: To incorporate pathology/radiology as a required clerkship in our clinical curriculum. Acquaint our medical students with various aspects of pathology both clinical and anatomic pathology.

Acquaint our medical students with various imaging modalities.

Need for Innovation/Practice: We feel that every practicing physician must be familiar with the indicators, costs, as well as the limitations and risk of various imaging and pathology tests. All physicians must be aware of laboratory and imaging costs and the need to reduce unnecessary tests. Clinicians must be able to interpret various laboratory tests and radiology findings, correlate them with their patient's clinical presentations and utilize them in their patient's management plans. Clinicians must incorporate patient specific variables into ordering appropriate imaging and laboratory tests. We also feel that attending post mortem examinations is a very valuable clinical learning resource.

We are in the process of developing an OSCE for the rotation which will have a clinical case with appropriate radiologic images as well as laboratory findings and gross and microscopic pathologic findings including cytology as well as histopathology, immunohistochemistry and electron microscopy if needed. The students are also provided with case studies into molecular genetics and special studies like flow cytometry and toxicology. The rotation is four weeks: two weeks in pathology and two in radiology with individualized rotations for each student. Currently we have 16-18 students per rotation. We have started a pilot run of the rotation October 2014. The required rotation will become effective July 1st, 2015. In addition to the above rotation we have multiple electives in pathology and radiology.

Methods, Materials and Resources used: Medical students input and requests that the elective rotation become required as they realized the important role lab tests and pathology services played in patient care.

Developed objectives

Submitted a proposal to the department faculty and chairman

Received commitment and approval from the department faculty and chairman

Presented proposal to the clinical curriculum committee and once approved we took our proposal to the Executive Curriculum Committee where it was discussed and we are asked to modify parts of our proposal

Revised proposal and presented it to the Preclinical and Executive Curriculum Committees and obtained their respective approvals and recommendation to start it as an elective this year to ensure the appropriate structures and resources are available to implement the required clerkship effective July 1st, 2015

Departmental faculty, staff and clerkship coordinators in pathology and radiology

Office of Medical Education

Outcomes : The trial rotation have been very well received and are highly rated by the students.

The pathology clerkships are specifically mentioned as a strength in the graduating questionnaire.

The pathology electives as well as the fourth upcoming required pathology/radiology rotations have been very valuable recruitment tools for the department of pathology with 13 graduating seniors choosing to pursue a career in pathology and five of them would prefer to join our program.

Strengths and Areas for Improvement:

Strengths

The rotations are very well structured.

The evaluations are both formative and objectives.

We currently have 478 rotations in pathology per year.

Preparation of our students to be efficient physicians that will utilize the lab tests as well as imaging in the cost effective manner to provide competent, compassionate care to their patients.

Areas for Improvement

This rotation will be more effective if is in the third year. Developing the OSCE will make the rotation stronger.

Feasibility of Program Maintenance/Transferability: Our program has been reviewed and approved by the Clinical Curriculum Committee as well as the Executive Curriculum Committee and our pilot run indicates that we will be able to maintain it for future years with minor modifications.

87. Impact of a Student Led Board Review Course on Step 1 Readiness and Performance

Laura Malosh, University of Cincinnati

Objective/Purpose: The United States Medical Licensing Examination® (USMLE®) is a three-step examination for medical licensure in the United States. Medical students typically take the USMLE Step 1 Exam (Step 1 exam) after the completion of their second year of medical school. Step 1 assesses whether the student understands and can apply important concepts of the sciences basic to the practice of medicine, and emphasizes principles and mechanisms underlying health, disease, and therapy mechanisms. The purpose of this study was to determine whether there is a correlation between a student's participation in the University of Cincinnati College of Medicine (UCCOM) Student Led Board Review Course (SLBRC), scores on the Comprehensive Basic Science Examination (CBSE) Step 1 practice exam, and the Step 1 exam.

Need for Innovation/Practice: Proper preparation for the Step 1 exam is critical, not only to ensure progression to the USMLE Step 2 Exams, but also because the Step 1 Exam scores are considered by residency programs when selecting candidates. As the number of medical students seeking residency training increases and the number of residency positions remains relatively stagnant, a competitive Step 1 score is every medical student's aspiration. Medical schools need to provide services to support this goal that go beyond the basic curriculum.

Methods, Materials and Resources used: UCCOM has offered the SLBRC since 2006 in an effort to better prepare our medical students for success on the Step 1 exam. The course is sponsored by the Office of Academic Support and employs recent high scorers from the 4th year class and the Medical Scientist Training Program (MD/PhD program).

Most of these instructors are also experienced tutors. The purpose of the course is to review the high yield topics from each of the subject areas tested on the Step 1 exam. The course is approximately 12 weeks long with two-hour weekly sessions occurring during the spring semester of Year2.

Outcomes : To date, no studies have been done to determine whether there is a positive correlation between SLBRC participation and scores on the Step one practice exam (CSBE) or the Step 1 exam. Thus, we will analyze the data between 2006-2014 to determine whether there is a positive correlation between attendance in the SLBRC and scores on both the CBSE and USMLE Step 1. We believe will see a larger correlation between SLBRC and CBSE compared to SLBRC and Step 1, and that there will be a positive correlation between CBSE and Step 1. Factors that we will consider in these analyses include the dependent variables, such as scores on the Comprehensive Basic Science Exam (2012-2014) and scores on the USMLE Step 1 exam. Independent variables include number of SLBRC sessions attended, gender, medical school class rank, last MCAT (VR, BS, PS and Total score), number of MCAT attempts and undergraduate cumulative science GPA.

Strengths and Areas for Improvement: Strengths include relevancy of topic to allopathic medical schools and excellent archival data spanning eight years and over 1400 students. Areas for improvement include modifying the design to allow for stronger statistical analyses that might go beyond correlational conclusions.

Feasibility of Program Maintenance/Transferability: This program requires minimal funding (~\$2500) and resources while delivering a potentially very valuable service. Student instructors also benefit by gaining teaching experience. It could easily be adopted by others schools with an interest in increasing their Step 1 support services.

88. What do students observe when using an ophthalmoscope?

Stephen Charles, University of Kansas

Objective/Purpose: The purpose of this quality improvement initiative is to determine what students actually see when using an ophthalmoscope.

Need for Innovation/Practice: Students in medical education have become used to practicing physical exam skills on Standardized Patients (SPs). Most SPs at the University of Kansas present with normal ophthalmologic findings. This situation has resulted with students spending very little time using the ophthalmoscope during a HEENT physical exam.

Methods, Materials and Resources used: Thirty-one second year medical students examined a SP first using the ophthalmoscope. Then after the SP examination, the students were given the opportunity to use an eye simulator to gain additional practice using the ophthalmoscope. Students were divided into two groups to look at the left or right eye. Sixteen students observed the left eye and fifteen observed the right eye. Every student was asked by a faculty member to describe what they were able to see. If they observed something abnormal, the student was then asked to provide a diagnosis.

Outcomes : Of the thirty-one second year medical students that participated in this project, 48.4% identified seeing blood vessels, 29.0% cotton wool spots, and 29.0% optic disk. Over half (51.6%) of the students did not identify observing at minimum blood vessels. Fourteen students were unable to identify abnormal findings and could not make a diagnosis. Only five students (16.1%) were able to correctly identify the appropriate diagnosis. While this is a small cohort of students, it should be noted that students struggled to identify basic anatomy of the eye, to distinguish if the eye was normal or abnormal, and to provide a diagnosis.

Strengths and Areas for Improvement: Verbal feedback from using the simulator included “This was useful because I feel bad about shining the ophthalmoscope in the SP’s eye for such a long time.” A different student stated, “I feel more confident using the ophthalmoscope after practicing with a simulator.” Finally, multiple students described wanting to use the simulator prior to the SP encounter. Some areas of weaknesses for this quality improvement project are the small sample size and the simulator needed to be used before the SP encounter.

Feasibility of Program Maintenance/Transferability: The simulator was purchased using a grant for \$1300. The maintenance on this simulator is minimal and has the ability to help students identify normal and abnormal findings. This could easily be implemented at other institutions, provided the funds and time in the curriculum are available.

89. Early Identification and Remediation of Medical Students’ Communication Skills

Laurie Whitman, University of Michigan Medical School

Objective/Purpose: The Office Hours Program (OHP) was developed to identify medical students with low performance in communication skills early in their pre-clinical education and provide additional training.

Need for Innovation/Practice: There is increasing evidence for enhanced provider communication skills as a tool to improve patient outcomes. Often students who struggle with communication skills are not identified early enough in their training to ensure they are successful on subsequent school and national assessments.

Methods, Materials and Resources used: First year medical students participate in a medical interview focusing on communication skills with a standardized patient instructor (SPI). The OHP was designed to identify and remediate previously unaddressed students with passing scores falling in the marginal 70 to 80% range. Based on this criterion, 59 students with a mean communication skills score of 73% on the first year medical interview were invited to participate in the OHP. Students were informed of an expected one hour time commitment for preparation to be completed online and one hour onsite interview and feedback time. Twenty-two students volunteered and completed the OHP which consisted of 1) Video review of a fellow classmate’s interview, 2) Video review of the student’s own medical interview, 3) Self-assessment written activity, 4) Three articles to review as preparation material, 5) Interview and feedback with a SPI.

Outcomes : Using the same scoring criteria as the first year medical interview, the 22 students who participated in the OHP increased their mean communication skills score from 73% to 86%. Also, none of these students failed communication skills on the second year comprehensive pre-clinical OSCE which assesses communication skills across multiple stations. Seven of the 37 students who declined the OHP invitation and 12 non-invited students failed the communication skills portion of the same exam.

Strengths and Areas for Improvement: The OHP provides students with a flexible, yet rigorous, method for improving their communication skills prior to high-stakes examinations. We are adapting the program to include clinical year students as we review performance on clerkship-related SP exercises in preparation for a high-stakes, fourth year comprehensive OSCE.

Feasibility of Program Maintenance/Transferability: The OHP could easily be transferred to others schools with existing standardized patient programs:

- Establish a baseline communication skills score with a SPI interview
- Oversee student preparation
- Ensure accurate student self-assessment
- Provide a second SPI interview with timely feedback from the SPI

90. Service Transformed: Using Photography to Develop Empathic and Self-Reflective Skills in Medical Learners

Monica Lypson, University of Michigan Medical School

Objective/Purpose: Using a collection of over 30 paired photographs of veterans from various conflicts we developed an interactive course to help learners understand the trajectory of U.S. service members. This course provides learners with a comprehensive overview of veteran-centered care and engages learners in developing skills in military cultural competency, empathy, and assessment and triage of several mental health conditions. The aims of this course are to promote learners' knowledge, skills, and attitudes towards caring for veterans and stimulate critical thinking in the areas of health care disparities, cultural sensitivity, patient-centered care, and empathetic medical interviewing.

Need for Innovation/Practice: With over two million veterans returning from recent conflicts in Iraq and Afghanistan, it is essential that all those in the health professions learn to work with veteran patients and develop the necessary clinical acumen whether working in Veteran Affairs (VA) Health System or civilian hospital settings. It is equally important that training programs provide learners with educational opportunities to gain this knowledge.

Methods, Materials and Resources used: The photographs are placed alongside several thought provoking open-ended questions and background information to address the humanistic aspects of medicine. The course uses four key pedagogical methods:

- (1) Didactic Pedagogy – Provides topic background and concept definitions pertinent to clinical applications using veterans as a subject matter
- (2) Photo-Elicitation – Displays paired images and biographical information to provide insight into the experiences, concerns and perspectives of veterans
- (3) Reflective Writing - Corresponding questions alongside images to heighten medical learners' awareness, and stimulate critical thinking about the complexities of caring for veterans
- (4) Web-based Learning - Online interface, LAMS, to accommodate both the instructional and interactive portions of the modules

Photo-elicitation is a powerful tool for fostering reflection, by encouraging visual language and aesthetic knowledge. Semi-prompted writing exercises augment the photographs to involve learners in the process of acknowledging and assessing their beliefs and biases. Photo-elicitation and reflective writing appeal to the affective domain of learning and are a notable way to address the humanistic aspects of medicine.

Outcomes : Students who have taken this course rated it positively indicating the course stimulated improvement in their ability to reflect on their own attitudes toward veterans, made them more mindful of potential disparities in the health care system, and heightened their awareness about providing patient-centered health care.

Strengths and Areas for Improvement: This course has previously been delivered in an in-person setting to second year medical students. This course is ideally suited for a completely on-line format as it incorporates key domains of elearning, particularly lessons that communicate information and lessons that build on procedural skills.

Feasibility of Program Maintenance/Transferability: Our goal is to re-configure this course into an on-line format making it easily accessible to others outside of our institution.

91. Enrollment and completion of MB-STREAM, an online mind-body skills training course

Suman Gupta, The Ohio State University

Objective/Purpose: We aimed to assess:

- 1) How many people will enroll in an online mind body skills (MBS) course?,
- 2) Which modules are the most popular?, and
- 3) What behavior changes will participants make after completing modules?

Need for Innovation/Practice: Burnout is becoming increasingly prevalent and has detrimental effects upon healthcare and patient satisfaction. MBS have the capacity to combat burnout. Most studies use in-person training, which is costly, time-demanding, and may not reach highly stressed professionals. Little research has been done with online MBS electives.

Methods, Materials and Resources used: Mind-Body Skills Training for Resilience, Effectiveness, and Mindfulness (MB-STREAM) is a 12 module online interprofessional course designed to teach health professionals skills to enhance their effectiveness with patients and improve personal coping. We examined registrations between May 1 and August 31, 2014 and analyzed how many registrants began one or more modules by September 30, 2014. We also reviewed written comments about planned behavior change included in each module's evaluation.

Outcomes : 693 participants, representing medicine, nursing, social work, counselors, psychologists, other health professionals and students registered in 4 months. 57% of registrants completed at least one module by September 30. The two most popular modules were "Introduction to Stress, Resilience, and Relaxation Response" (ISRR) (N=688) and "Autogenic Training" (N=670). 99 participants completed the evaluation after ISRR and 91% intended to make some change: 49% said they would use the techniques learned themselves and 44% would use introduce the techniques to patients or other people.

Strengths and Areas for Improvement: Online MBS training is popular among a diverse group of health and non-health professionals and trainees. Further studies are warranted to examine the long-term impacts of MB-STREAM on participants, its effect on burnout and resiliency, and its impact on patient care. This study could be made better by looking at detailed progress of users through modules, widening the completion date cutoff to greater than a month, and assessing the impact of modules on cohorts of people in different professions.

Feasibility of Program Maintenance/Transferability: The MB-STREAM is widely accessible since it is online and currently free for all OSU students, faculty, and staff. It is available to anyone who chooses to enroll for a small fee. Modules are pre-recorded so participants are able to move through at their own pace. These factors make the MBSTREAM transferable to other institutions and easy to maintain. Data of user progress and responses to evaluation are kept on a secure server, so data may easily be collected and analyzed.

92. Rethinking Remediation: Raising expectations to cast a wider net

Edward Simanton, University of South Dakota Sanford School of Medicine

Objective/Purpose: This innovation was introduced to steer academically at risk medical students into mandatory remediation by raising the minimum passing score on assessments from 71% to 75% throughout the preclinical curriculum.

Need for Innovation/Practice: Historically, a small but significant number of students tended to achieve marginal passing scores in assessments in multiple preclinical courses, but they did not remediate because they had "passed". Typically, these students would form a significant component of the annual cohort deemed to be at risk for failing STEP-1.

Methods, Materials and Resources used: By raising the minimum passing score to 75%, at-risk students were identified via each organ-system block comprehensive final exam. These students were placed in a faculty-driven, intensive 3-day block remediation program. This involved peer teaching and 1-on-1 student/faculty tutoring, specifically tailored to each individual's identified areas of weakness. They were then allowed to take a make-up final exam.

Outcomes : During the initial offering of the new preclinical curriculum, final exam remediation occurred a total of 18 times over 10 system blocks. Of those occurrences, 10 represented students scoring between 71% and 75%. There was only a single instance of a student being unable to achieve a passing score on a make-up exam following the remediation process. Our current class took the CBSE on November 25th and will take STEP-1 in January; any changes in performance on these exams will be evaluated.

Limitations: This change in passing score and the implementation of intensive, customized remediation was part of a significant curricular change from a discipline-based to an organ-system curriculum. This included a reduction in the preclinical calendar from 21 to 16 teaching months. At this time we do not know if any changes in student performance are due to increased faculty expectations, customized remediation, the restructured curriculum or a combination of these.

Strengths and Areas for Improvement: The remediation process is primarily "content loading" and needs to be expanded into the areas of cognition, retention and study strategies.

Feasibility of Program Maintenance/Transferability: Raising assessment standards to drive a mandatory remediation program for academically at risk students is not difficult to implement and can easily be adopted at other schools.

93. Improving Medical Student Wellness Through A Longitudinal Multi-Faceted Curricular Approach

John Schneider, University of Missouri School of Medicine

Objective/Purpose: Medical education substantially impacts medical student mental health and wellness. The AAMC's statement on learning environment emphasizes high quality, safe, and effective care for patients founded in respect, resilience, integrity, and collaboration amongst others. Curricular changes prompted discussion on improving the longstanding evidence of medical student mental health and wellness. The University of Missouri School of Medicine has implemented three key programs that address these needs. The Legacy Teachers program recognizes and celebrates patient's roles as teachers. Annually, third year medical students are invited to submit essay's, poetry, or artwork that recognize, thank, and honor a patient's impact on their learning. In 2014 37% of students elected to honor a legacy teacher. The event culminates in a celebratory luncheon that helps connect students with the reasons they entered medical school. Student participation has increased each year for the past 9 years. The Ambulatory Care Experience (ACE) course pairs first and second year students with physicians in various specialties. This very popular course enables students to take a break from their studies, explore multiple specialties, and experience patient care first hand. In 2013, 64% of students reported that the course enhanced their professional development. Many (54-78%) second year students elect to continue in these mentoring relationships when ACE becomes optional in the second year.

Introduced in 2013, the Contemplating Medicine, Patients, Self and Society (COMPASS) course is a unique small group program composed of medical students from all 4 years. The goal of the course is to develop and foster skills of a physician with a focus on self-awareness and personal well-being. The sessions allow students the opportunity to reflect, mentor and discuss topics that are meaningful to each individual through storytelling, reflective writing and group discussion. Two faculty members guide students in topics such as personal transitions, values, and cultural awareness. This course began in the fall of 2013 and is continuously being evaluated and modified by both medical students and faculty to best address the most critical aspects of student well-being both in medical school and beyond. Each program is important for strategically implementing a unique longitudinal curriculum that addresses the issues of medical student health and wellness. By intentionally placing these programs throughout the four years of medical school, students are given opportunities to reflect and mentor throughout their entire preclinical and clinical educational experiences. •

94. Quick Response Technology in the Flipped Classroom for Real Time Course Evaluations

Jay Behel, Rush University Medical Center

Objective/Purpose: Describe the process for developing a medical education fellowship using a flipped classroom model

Need for Innovation/Practice: Medical education fellowships are longitudinal faculty development programs designed to prepare faculty for their roles as teachers and educators. During a medical education fellowship, participants learn the language and conceptual constructs of education, while at the same time that they are expected to develop and apply new educational skills. In the flipped-classroom model (Prober and Khan 2013), learners build the requisite knowledge framework from preparatory materials, which allows for application, practice, and feedback during face-to-face sessions. This submission describes the process of transforming a medical education fellowship using a flipped

classroom model.

Methods, Materials and Resources used: The Scholars for Teaching Excellence faculty Fellowship is an 8-month long program available to faculty in health professions education at UIC. The participants typically include both junior and senior faculty. The program includes classroom sessions on topics in instructional design and methods, and curriculum development. Each participant completes an educational project that demonstrates application of the knowledge and skills learned during the program. Using a “backwards design” (Wiggins and McTighe, 2005) process, core concepts and goals for each session were clearly defined. In-class exercises that allowed for achievement of learning outcomes were developed. In-class exercises include small group work, lesson plan development, educational project development, and reflective writing.

Reading assignments and screencasts (narrated PowerPoint™ presentations) that prepared participants for in-class exercises were created. An annotated bibliography that allowed for in-depth exploration of topics was prepared.

Outcomes : The backwards design process facilitated the creation of a curriculum map for the fellowship program. New instructional materials – screencasts, in-class application exercises, and annotated bibliographies have been created. In-class presentations are now shorter. More class time is spent on discussion and small group work. Participants have reported preparing for class sessions by completing reading assignments, viewing screencasts, or both.

Strengths and Areas for Improvement: Transforming this medical education fellowship using as flipped classroom model has resulted in more consistent pre-class preparation by participants. Screencasts in particular provide flexibility for participants – they are able to prepare for class sessions in settings and at times that convenient. The screencasts and annotated bibliographies permit reinforcement of key concepts and provide guidance for individualize in-depth learning. The effect of these changes on the quality of the participants’ educational projects is not yet known.

Feasibility of Program Maintenance/Transferability: Curricular change requires careful planning and additional effort. Development of new educational materials, such as screencasts, is facilitated by inexpensive technological tools. This fellowship program serves as a model for supporting faculty in their roles as teachers and educators.

95. Evidence-Based Recalibration of Competency Standards: A Quality Improvement Initiative

O'Brien, Celia, Greene, Marianne, Thomas, John, Northwestern University

Objective/Purpose: To describe a QI initiative at the Feinberg School of Medicine that aligns our curriculum, assessments and competency framework.

Need for Innovation/Practice: The LCME requires a medical school to define the competencies to be achieved by students and ensure the curriculum design supports that achievement. The 2015-16 LCME standards also mandate medical schools to engage in continuous quality improvement for all of the standards. Curricular leaders may struggle to find a feasible method to regularly evaluate their core competencies. FSM launched a new curriculum in 2012 that is based on eight core competencies and 51 sub-competencies. Since implementation and the collection of thousands of student assessments, it is apparent that our sub-competencies need modification. We have identified gaps and areas of overlap in instruction and assessments. Our goal is to improve the precision of our sub-competencies.

Methods, Materials and Resources used: Our approach utilizes the following evidence to evaluate the current framework:

- Quantity of instruction per sub-competency
- Quantity of assessment per sub-competency
- Areas of overlap between sub-competencies
- Quality and clarity of sub-competency language

In September 2014, we convened a panel of 12 faculty leaders, many of whom drafted the original framework. At each meeting, faculty review evidence and propose a course of action for each sub-competency: 1) Remove; 2) Condense; 3) Create; 4) Revise; 5) Delay.

Outcomes : Thus far, the panel has proposed the following (numbers indicate sub-competencies):

- Revise: 12
- Condense: 6
- Remove: 2
- Create: 2
- Delay: 1

Many of the revisions are meant to clarify the meaning of the sub-competency. The next steps are to submit the proposal to others, including students, before bringing it to the curriculum committee for approval.

Strengths and Areas for Improvement: Our preliminary results indicate that QI can be a powerful tool to refine a competency framework. A major strength of this approach is the use of data to inform evidence-based decision making. We also rely heavily on our panel's expertise to give context to the data during discussions, as they spend the most time designing assessments and instructing students. It is challenging to find a common meeting time for 12 busy faculty members. Although we had hoped to finish in the fall of 2014, our new goal is completion by February 2015.

Feasibility of Program Maintenance/Transferability: We believe this model can be used at any medical school, provided that they have the resources to collect and analyze the appropriate data.

96. Measuring the Impact on Dedicated Resident Participation in Education Committees

Ronald Magliola, The MetroHealth System

Objective/Purpose: Describe an adaptation of our Internal Medicine and Pediatrics (Med-Peds) residency Program Evaluation Committee (PEC) to enhance resident engagement, morale, communication, and understanding of ACGME requirements and program leadership effectiveness.

Need for Innovation/Practice: In July 2013, the Accreditation Council for Graduate Medical Education (ACGME) delineated the function of each residency's PEC to focus on planning, developing, implementing, and evaluating educational activities of the program; reviewing and making recommendations for revision of competency-based curriculum goals and objectives; addressing areas of non-compliance with ACGME standards; and reviewing the program annually using evaluations of faculty, residents, and others. The PEC requires at least one resident representative, but the effect of resident representation, particularly multiple residents, on PEC functions has not been described or measured.

Methods, Materials and Resources used: In May 2014, one resident from each postgraduate year (PGY) class was added to our Med-Peds PEC, historically comprised of only faculty members including the Center Director, Program Director, Assistant Program Directors and Chief Resident. Each residency class selected a primary representative along with a provision to delegate an alternative representative and the length of tenure for each member. We hypothesized that adding four resident representatives to our PEC would significantly improve the resident experience in five key areas: engagement, morale, communication, understanding of ACGME requirements and program leadership effectiveness. SurveyMonkey will be utilized to measure the impact on residents in the five key areas on a seven-point Likert scale. Subjective accounts of resident experience will also be gathered to further tailor and improve the program. Data will be collected after a nine-month experience in February 2015.

Outcomes : Subjective feedback and resident attendance has been positive and suggests that the additional resident representatives to our PEC has improved the key target areas above. A mixed method survey with both qualitative and quantitative items will be administered. Data pursuant to our hypothesis will be presented.

Strengths and Areas for Improvement: This innovation was simple to implement and analyze. It appears to have already had an immediate and significant impact. Strengths include a methodology with scalability to measure the impact of future residency changes. A weakness is that data was only collected after the innovation, thus, pre-post analysis is not possible.

Feasibility of Program Maintenance/Transferability: The innovation of including multiple resident representatives is highly scalable. We hope to encourage other residency programs to adopt this model for

their PEC and to utilize a similar tool for outcome measures.

97. Personal Statements: A Pilot to Assist Students in Crafting the Personal Narrative

Erica Huelsmann, Christine Tung, Mary Anderson Rush Medical College

Objective/Purpose: The residency application process has become increasingly competitive. In order to maximize fourth year medical students' residency applications a pilot project was developed to improve personal statements.

Need for Innovation/Practice: As the Residency match has become more competitive students must maximize all aspects of their applications. Students rarely participate in creative writing while in medical school. Rush Medical College of Rush University Medical Center is a graduate health care institution without a traditional university English department. The pilot program was developed to assist students in crafting personal narratives about their pursuit of a residency specialization and in persuasively amplifying their concrete qualifications for that residency choice.

Methods, Materials and Resources used: Rush Medical College contracted with an experienced educator and doctoral candidate at the English Literature department at the University of Dallas to develop a process and exercises for fourth year medical students in crafting their personal statements. Students were asked to work through three exercises beginning in April 2014. Exercises were posted on Blackboard and all feedback was given via Blackboard. Exercises helped students begin the writing process using elements of narrative and persuasive writing. Students were allowed 30 days to complete each exercise.

Outcomes : 64% of the class of 2015 participated in the pilot. Of those who participated over 70% thought the exercises were helpful and over 70% would recommend the exercises to other students. During the first week of November students were polled on the number of interviews they were offered. Those who participated in the pilot applied to an average of 5.5 fewer residency programs and received 1.34 more interview invitations than those who did not.

Strengths and Areas for Improvement: Strengths of the program include structured, step-by-step exercises that led students through the personal statement process. Students also appreciated working through exercises in the late spring and early summer of the fourth year because it helped them avoid procrastination. Areas for improvement include integration with specialty specific content. The beginning of the fourth year is busy and engagement of the entire class will need attention.

Feasibility of Program Maintenance/Transferability: Medical schools that are affiliated with a university that has an undergraduate and graduate liberal arts program may find a collaborative arrangement with an English department simple to implement. For institutions like Rush that are not affiliated with a traditional undergraduate liberal arts program the collaboration may take more time and finesse, but such collaborations are fruitful for the students.

98. Is your teaching valued? Developing a Faculty Activity Reporting Exercise (FARE--a workload model) for medical school faculty at a "teach first" institution.

Sheila Nunn, Ross University School of Medicine

Objective/Purpose: To describe the development of a faculty workload model that features good faculty engagement and is adaptable to a variety of disciplines and activities.

Need for Innovation/Practice: Workload models serve a number of purposes. They are used by academic administrators to allocate duties and to recognize faculty contributions to the activities of departments and institutions. When transparent, individual faculty members are able to see where their workload sits in the wider context of that of their departmental and/or institutional colleagues. There are increasing demands on our time, with pressures in the domains of teaching, research, administration and clinical practice, however, these domains are not uniformly distributed or experienced by faculty within a single department or between different departments. As such, ensuring engagement by faculty and ownership of the process is a challenge.

Methods, Materials and Resources used: The authors have developed a workload model with the following key aims in mind:

1. Equity between different disciplines/departments
2. Recognition of different academic and support activities
3. Transparency
4. Faculty engagement and ownership

To achieve these aims, a step-wise process was utilized to develop the model, relying on a “bottom-up” approach that means the model was designed by the faculty themselves. Early feedback indicated that “workload” was a term with negative connotations, therefore the model was renamed a “Faculty Activity Reporting Exercise (FARE)”. A draft FARE was developed in the Department of Anatomy at our institution, followed by its introduction into other departments (Pharmacology, Pathology and Clinical Medicine). An iterative process of feedback from faculty members and department chairs was used to refine and improve FARE.

Outcomes : The developmental stages of the model will be presented, along with the “final” version. Key aspects of faculty input, as well as LEAD Coach/Advisor input, during its development will be highlighted.

Strengths and Areas for Improvement: By incorporating faculty input from the initial FARE development, faculty ownership and engagement was increased.

Feasibility of Program Maintenance/Transferability: The process for development of FARE is highly applicable to other schools, given the consultative nature of its development that allows for faculty involvement at the embryonic stage.

99. Creation of a Student Interest Group in Integrative Medicine to Promote Physician Resilience and Life-Long Learning

Robert Rakowczyk, The Ohio State University

Objective/Purpose: Two goals of physician education are to:

1. Develop medical students into healthy, resilient role models
2. Promote life-long learning

The creation of a popular new student interest group in Integrative Medicine at OSU supports these two goals. By reflecting on what has worked and what did not in its first year and a half of operation, this student-driven initiative can serve as a source of lessons learned for other programs.

Need for Innovation/Practice: An increasingly worrisome phenomenon in the physician workforce is burnout, or mental and emotional exhaustion. Studies have shown that early signs of burnout may arise as soon as the third year of medical school. This sets up newly minted physicians for a career characterized by negative feelings and burnout, which ultimately leads to lower quality patient care. It is also known that many of our country's most pressing medical problems are driven by lifestyle habits, and physicians are not routinely trained nor particularly adept in making healthy lifestyle choices. This makes it more difficult to counsel patients in adopting healthy lifestyles. Additionally, demands for evidence-based care are increasing, and this requires both skill and interest in pursuing clinical questions and deepening one's own medical knowledge. These three concerns are addressed by the creation of a student interest group in Integrative Medicine, with the goal of increasing student mental and emotional resilience through mind-body practices like meditation, increasing practical knowledge about nutrition and self-care practices, and by encouraging self-study of medicine topics that are not covered in the standard medical school curriculum.

Methods, Materials and Resources used: Three medical students started the group with the goal of alleviating stress in their classmates and encouraging healthy habits. Students were polled to determine the most popular topic they wanted to explore. A meditation training seminar was held, followed by weekly 30-minute group meditation sittings to provide experience in various meditation techniques. Speakers came in to discuss different topics related to Integrative Medicine during lunch hours. A free 8-week meditation training course was set up to provide a more in-depth experience for 10 students wishing to deepen their study of meditation.

Outcomes : 105 medical students across all class years signed up to receive news and announcements from the group. The number of students actively planning and carrying out projects expanded from 3 to 6

students from Year 1 to Year 2 of the group's existence. Polling of medical students revealed a strong preference for learning about nutrition, followed by interest in meditation. Experiential workshops were far more effective and popular than lecture based topics.

Strengths and Areas for Improvement: Passionate students received training in Integrative Medicine in the form of week-long training programs that gave them the confidence to lead their peers. All topics were presented in a way that was broadly accessible to medical students; evidence was discussed both for and against various treatment modalities, and students enjoyed discussing deeper aspects of evidence-based practice. Students are excited to make a contribution to training future physicians, and some have taken on the goal of making content contributions to the medical school curriculum, as well as advocating for the creation of an advanced competency track in Integrative Medicine. Out-of-pocket costs and restrictions on students' time were identified as the two biggest barriers to participation in some events.

Feasibility of Program Maintenance/Transferability: Participation in the group has increased from its first to its second year, and it looks to continue growing as students find projects that excite them. The lessons learned can apply to any other student group that shares our general medical education goals, such as quality improvement or student wellness initiatives.

100. Personal Transition to the Profession: A novel longitudinal course to help medical students thrive
Gaurava Agarwal, Feinberg School of Medicine Northwestern University

Objective/Purpose: The course has three main aims: to identify the unique challenges of the profession of medicine and help students understand the effect these challenges may have on their personal and professional lives; to introduce students to positive psychology methods that help them develop resilience and achieve optimal functioning; and to promote a culture of medicine in which students are comfortable discussing their vulnerabilities, and seeking help when needed. In addition, we hoped the course would help normalize common struggles and provide a venue for self-reflection that could help in career counseling.

Need for Innovation/Practice: Personal Transition to the Profession (PTTP) is a longitudinal course designed to help medical students make the transition to medical school and prepare for entry into the medical profession as data shows that students are at elevated risk for burnout, depression, suicidal ideation, thoughts of dropping out, and decline in empathy over the course of their medical school careers. PTTP is also the key delivery method for teaching one of our eight core competencies, Personal Awareness and Self-Care. PTTP is required for all medical students and runs throughout all four years at Northwestern University Feinberg School of Medicine.

Methods, Materials and Resources used: Methods include monthly small group interactive sessions facilitated by faculty, large group presentations by medical school college mentors, and blog submissions to promote self-reflection and peer learning. Each month has a topic such as wellness, positive psychology concepts, risk factors for physician impairment and burnout, and preparation for the transition to clerkships and residency.

Outcomes : In course evaluations, students reported (% strongly agree or agree): 90% felt small group was an effective learning experience, 82% reported they will be more open about their limitations and be willing to ask for help in their life and career, 67% felt the course helped ease the transition to medical school, 83% felt they learned about the challenges facing them in medicine, and 68% felt they were more self-aware. The small group faculty reported: 93% noted significant growth in self-awareness of most of their students and 64% had students reach out to them outside of formal group sessions for support and advice.

Strengths and Areas for Improvement: Although the course is faculty time intensive, we have found faculty find great meaning in helping students develop their professional identities.

Feasibility of Program Maintenance/Transferability: This course represents a successful collaboration between multiple departments at our institution. It can be implemented at other institutions with the assistance of a curricular manual that we are developing.

101. A “Medicine Mentor” program to increase bedside observation and quality of the inpatient internal medicine (IM) clerkship

Katherine Walsh, The Ohio State University

Objective/Purpose: Despite the value of bedside teaching in improving student learning, (1) the amount of time devoted to direct observation has declined. (2) Many students are not observed taking a history or performing a physical examination. (3) Our aim was to increase bedside observation and coaching related to important core patient care competencies and to increase meaningful contact with IM faculty.

Need for Innovation/Practice: After a number of failed attempts to increase direct observation, Ohio State’s IM Student Education Committee undertook to approach the problem in a radically different way.

Methods, Materials and Resources used: The innovation created a new teaching role, the “Medicine Mentor.” Using an apprenticeship model, the emphasis was placed on coaching and deliberate practice. (4) One mentor supervised 6-8 students during small group time (7 hours) and at the bedside (8 hours). Mentors were credited sixteen hours of teaching time. Bedside teaching occurred with a ratio of 1:1 to 1:3 and each individual student was observed at least twice (history and exam) with feedback given early in the clerkship. Review of notes and additional observations were encouraged. Classroom time was flexible, based on needs, and included discussion of professionalism, clinical reasoning, and interpretation of laboratory data and diagnostic tests. The innovation was implemented in the inpatient third-year IM clerkship that consisted of four 2-week clinical assignments. All students in the 2012-2013 academic year participated (N=224) and evaluations were compared to the 2011-2012 year (N=215).

Outcomes : End-of-program evaluations (all clerkships completed) and the AAMC graduate questionnaire served as the program outcomes with differences analyzed using Chi-square and Fisher exact tests. On the graduate questionnaire, students reported increased perceptions of direct observation of history and physical exam skills and improved feedback compared to data collected from the previous class and the national benchmark. At end-of program, students reported a perception of improved “time with attending physicians.”

Strengths and Areas for Improvement: The ‘Medicine Mentors’ program was a feasible and effective innovation that improved student report of direct observation and time with attending physicians. Other measures of clerkship quality were unchanged. Faculty accepted the program and recommended increased time at bedside relative to classroom time, as well as increase in teaching credit.

Feasibility of Program Maintenance/Transferability: The program continues in its third year and within our new curriculum. The Medicine Mentor program may offer an alternative approach to schools looking to assure direct observation of students even on busy clinical teams.

102. The Resource Ring: Optimizing Communication with Clinical Preceptors

Laura Thompson, The Ohio State University College of Medicine

Objective/Purpose: To provide a portable resource for community preceptors as a teaching tool to support a structured clinical experience as part of an integrated, longitudinal curriculum

Need for Innovation/Practice: At The Ohio State University, medical students participate in a seventeen-month ambulatory clinical experience during their first two years. The curriculum is designed to teach the student how to be a participant in the healthcare team, including basic clinical skills, obtaining histories, and conducting physical exams. The structured curriculum requires students to practice clinically the content the students are learning in the classroom. The resource ring provides preceptors a concise, easy-to-read guide that explains their role in the process.

Methods, Materials and Resources used: We created a set of laminated resource cards for our preceptors to help facilitate the medical students’ experience and enhance the preceptor’s ability to teach the assigned material. When students arrive at their clinical site, they review these objectives with their preceptor prior to the start of the session. The resource cards are assembled on a ring, which makes it easy to add/remove content as the curriculum changes. The ring is organized to align with the overall curriculum and each card is specific to one of the twenty-three sessions the student will attend at the preceptor’s office. The objectives of the session are clearly outlined, such as perform vitals, take a social history or perform a shoulder exam. These resource cards support the “just in time” method of teaching. In

addition, the resource ring materials are available to students and to clinical preceptors as an iBook, a platform that is also supported by the College.

Outcomes : We will assess successful student completion of the objectives for each block in the clinical setting and will survey the preceptors regarding their use and satisfaction with the Resource Ring.

Strengths and Areas for Improvement: This is a usable, adaptable resource that succinctly communicates the goals, objectives and the specific curriculum that the students are expected to follow. This allows us to have clinical requirements even during the first two years of medical school, which we believe is a unique aspect of our curriculum. We will further assess the use of the material provided in the resource ring, and add additional relevant topics from the curriculum as needed.

Feasibility of Program Maintenance/Transferability: The Resource Ring and the corresponding iBook are directly transferable as a clinical curriculum, however would have to be edited to meet the objectives of other curriculums as needed.

103. Advocating for Advocacy: Developing an Advocacy Training Thread for Medical Students

Dipesh Navsaria, University of Wisconsin School of Medicine and Public Health.

Objective/Purpose: Medical Students at the University of Wisconsin School of Medicine and Public Health (UWSMPH) have had strong interests in learning principles and techniques of advocacy. Previously, this occurred via uncoordinated, ad hoc activities that were either extracurricular or informal. Several years ago, a learning activity for all medical students that taught basic advocacy skills was designed and implemented. Success of this led to the recognition of a need to offer additional instruction in advocacy to all students and develop elective offerings for more interested students.

Need for Innovation/Practice: Increasing roles of policy and population-based approaches to healthcare have led to a need for physicians to become effective in influencing change in these arenas through advocacy. It is critical to offer both didactic instruction as well as “real world” experience.

Methods, Materials and Resources used: A three-tiered approach to build understanding around advocacy was established. In the largest base tier, all medical students receive a brief introduction to the subject during medical student orientation. This is followed, using shared terminology, by a complementary lecture in our Population Health course. Then, all second year medical students experience a 2.5 day workshop that builds advocacy skills with a wide variety of mock advocacy events. The middle tier provides a smaller subset of interested students with elective real world opportunities that complement existing UWSMPH curricular tracks. For the very engaged student, the topmost tier—deliberately highly individualized and responsive to community partner needs—is undertaken, often as part of an MPH capstone project.

Outcomes : Measurement of student engagement in advocacy activities occurs as part of several UWSMPH surveys developed to evaluate outcomes of our school’s transformation to integrate public health and traditional medicine. These include standardized surveys of 4th year students and graduates at 1, 3 and 6 years after graduation.

Strengths and Areas for Improvement: UWSMPH offers several innovative concentrations in urban, rural, global, and population health. Rather than create a new “track”, the advocacy thread offers additional perspective and knowledge, allowing students to choose the aspects that will be most valuable for them in their primary program. Areas for improvement include strengthening institutional structures and faculty development.

Feasibility of Program Maintenance/Transferability: Existing initiatives benefit from common nomenclature and coordination with new initiatives limited to gaps in current offerings. Other schools could benefit from a similar approach.

104. Women Leading Healthy Change

Jennifer Wolf, Karyn Moss, Nischelle Kalakota, Lindsay Gallagher, University of Cincinnati

Objective/Purpose: Women Leading Healthy Change (WLHC) is a program at the University of Cincinnati College of Medicine in which medical students teach sessions on women’s health and mental health to

women recovering from prostitution and drug addiction. The classes aim to help women understand prevalent health issues and feel empowered to improve their lives. Medical students learn to approach this often-marginalized population with compassion, empathy, and openness.

Need for Innovation/Practice: Women living with mental illness and addiction that have been prostituted or subjected to poverty, often struggle with insecurities. Most of the women are reluctant to believe their voices should be heard and that their health matters. The medical school curriculum does not include exposure to this population, leaving students unprepared to care for patients like the women WLHC serves.

Methods, Materials and Resources used: WLHC selects eight female first year medical students to co-lead sessions at our two community partner locations with a graduate of the program. Five women's health sessions discuss female anatomy, gynecological exams, sexually transmitted illnesses, and contraceptive methods. Five mental health sessions cover the biologic basis of mental illnesses, psychiatric medications, and healthy living. A reflection session concludes the program. WLHC has a budget of approximately \$2,000. Through our partnership with Cincinnati Union Bethel, a 501(c)3 charitable organization, we apply for local grants, which allow us to print curriculum guides, purchase supplies for the sessions, and offer our program graduate co-leaders a stipend. We also receive funds from the University through our medical school student government.

Outcomes : The community women and medical students complete pre- and post-session surveys, which demonstrate that the women are learning from these sessions and that the medical students feel more comfortable working with underserved populations after completing the sessions.

Strengths and Areas for Improvement: The WLHC curriculum guide gives our medical students relevant information to teach and activities to engage the women. The visual aids, such as a pelvis model and speculum, are great learning tools for the women. To better prepare our co-leaders and reach more of the student body, we added two lunch talks this year on sexual assault care and gynecologic exams. We would like to build on this idea of reaching more medical students in the future.

Feasibility of Program Maintenance/Transferability: WLHC has well-established relationships with our community partners, and the City of Cincinnati offers grants that each year's executive board can apply for. With a willing community partner, we believe that other schools can adapt this program to their community's and medical students' needs.

105. An Integrated Approach to Direct Observation across Core Clinical Experiences

Kimberly Tartaglia, The Ohio State University

Objective/Purpose: Direct observation of clinical performance is a useful but challenging component to ensuring medical student growth and competence in skills such as patient care, communication, and professionalism. Herein, we describe the approach to direct observation in the OSU College of Medicine Lead Serve Inspire (LSI) curriculum during the core clinical immersions, entitled Part 2: Clinical Applications.

Need for Innovation/Practice: With the launch of Part 2 in June 2014, our academic program sought to introduce a more comprehensive and integrated approach to direct observation. To that end, we held a retreat of educational leaders in October 2013 to identify areas of "common core" skills, i.e. those essential to all students progressing to advanced clinical experiences. From that, three areas emerged as common, important skills: History, Physical Exam, and Professional Communication (Written and Verbal.) To adequately assess that our students are progressing in each of these areas, we sought to develop a reliable and efficient means of assessment.

Methods, Materials and Resources used: A task force for each domain (history, physical exam, professional communication) was created and charged with generating a checklist for observational assessments specific to their domain but applicable to a variety of clinical settings. Each task force consisted of a mixed group of faculty. The three task forces assembled 7 different forms that encompassed a focused history, comprehensive history, physical exam (broken down by sections), oral presentation, and written documentation (3 forms total for comprehensive, focused, and inpatient follow-up.) Using an application called MyProgress, the forms were converted to an electronic format that could be completed on student iPads.

Outcomes : The oral presentation form was piloted on inpatient pediatrics and the history and physical forms were piloted in ambulatory pediatrics and inpatient Internal Medicine prior to implementation for all students in July of 2014. Following the first 15-week session, we reviewed each form for overall utility and number of questions. For the second session, we combined the physical exam forms into one comprehensive form and shortened each form to less than 15 items. Data analysis is ongoing to determine which items on our checklists best discriminate student performance.

Strengths and Areas for Improvement: The strength of this program is a unified approach to assessing core skills in patient care, communication, and professionalism using a mobile technology application and consistent checklists across clerkships. Future efforts will focus on faculty and student development to promote the relevance of direct observation and increase the number of observations occurring by trained faculty educators.

Feasibility of Program Maintenance/Transferability: Our program-wide direct observation checklists can be easily shared with other programs, and we offer our lessons learned from simultaneously implementing a new technology to deliver our checklists.

106. Usage of On-Demand Research Basics Training Modules by Medical Students and Residency Programs, *Mark Trottier, Michigan State College of Human Medicine*

Objective/Purpose: The Michigan State College of Human Medicine developed and implemented an online program for training in research basics (RBT) to provide instruction on core research skills to trainees such as medical students and residents, as well as clinicians with limited research experience.

Need for Innovation/Practice: Medical students, residents and clinicians are extremely busy, yet a growing number are motivated to conduct clinical research despite a relative lack of research training. The RBT program provides on demand training in research basics to these individuals. The online nature of the program, and its modular structure, allows maximum flexibility for individuals to accomplish the training as their schedule permits.

Methods, Materials and Resources used: An 8 module research basics course was recorded and produced using eLearning software (Articulate). Modules integrate narrated PowerPoint slides, animations, and articles and assessments, and are accessible online through MSU's learning system. Modules may be viewed by a single individual, or as a group in a class guided by an instructor. Quizzes, administered in MSU's learning system, allow assessment of knowledge gained.

Outcomes : The use of RBT has been utilized for training of both medical students and residents since 2012. RBT online is used by medical students for a variety of reasons, including training in research basics, the fulfillment of responsible conduct of research requirements and as a required element of a preclinical research elective course. Moreover, one community health center requires preclinical medical students to complete all 8 modules before engaging in research at that institution. A total of 237 medical students have been enrolled in RBT online since its inception, with 130 students completing some or all of the modules. In addition, residency programs at MSU are beginning to incorporate RBT into their research conferences.

Strengths and Areas for Improvement: Strengths of the program include standardized instruction, flexible scheduling, ease of use, and low cost of training. The delivery format provides learners with on-demand access to content over several years and control of the educational experience. The program is also expandable and easily updated, via creation of modules with new or updated content. Areas for improvement include expansion of topics covered, such as evidence-based medicine and quality improvement.

Feasibility of Program Maintenance/Transferability: RBT is simple to maintain since it is a series of recorded modules. Routine tasks involved in maintenance include enrolling participants in the program and monitoring participant progress. Each of these are accomplished easily in MSU's learning system. RBT is also easily exportable into other school's online systems.

107. Transforming a Medical Education Fellowship Program as a Flipped Classroom
Janet Riddle, University of Illinois Chicago College of Medicine

Objective/Purpose: Describe the process for developing a medical education fellowship using a flipped classroom model

Need for Innovation/Practice: Medical education fellowships are longitudinal faculty development programs designed to prepare faculty for their roles as teachers and educators. During a medical education fellowship, participants learn the language and conceptual constructs of education, while at the same time that they are expected to develop and apply new educational skills. In the flipped-classroom model (Prober and Khan 2013), learners build the requisite knowledge framework from preparatory materials, which allows for application, practice, and feedback during face-to face sessions. This submission describes the process of transforming a medical education fellowship using a flipped classroom model.

Methods, Materials and Resources used: The Scholars for Teaching Excellence faculty Fellowship is an 8-month long program available to faculty in health professions education at UIC. The participants typically include both junior and senior faculty. The program includes classroom sessions on topics in instructional design and methods, and curriculum development. Each participant completes an educational project that demonstrates application of the knowledge and skills learned during the program. Using a “backwards design” (Wiggins and McTighe, 2005) process, core concepts and goals for each session were clearly defined. In-class exercises that allowed for achievement of learning outcomes were developed. In-class exercises include small group work, lesson plan development, educational project development, and reflective writing.

Reading assignments and screencasts (narrated PowerPoint™ presentations) that prepared participants for in-class exercises were created. An annotated bibliography that allowed for in-depth exploration of topics was prepared.

Outcomes : The backwards design process facilitated the creation of a curriculum map for the fellowship program. New instructional materials – screencasts, in-class application exercises, and annotated bibliographies have been created. In-class presentations are now shorter. More class time is spent on discussion and small group work. Participants have reported preparing for class sessions by completing reading assignments, viewing screencasts, or both.

Strengths and Areas for Improvement: Transforming this medical education fellowship using as flipped classroom model has resulted in more consistent pre-class preparation by participants. Screencasts in particular provide flexibility for participants – they are able to prepare for class sessions in settings and at times that convenient. The screencasts and annotated bibliographies permit reinforcement of key concepts and provide guidance for individualize in-depth learning. The effect of these changes on the quality of the participants’ educational projects is not yet known.

Feasibility of Program Maintenance/Transferability: Curricular change requires careful planning and additional effort. Development of new educational materials, such as screencasts, is facilitated by inexpensive technological tools. This fellowship program serves as a model for supporting faculty in their roles as teachers and educators.

108. Student perceptions of the Education-Centered Medical Home Mode

Daniel Colon, Northwestern University Feinberg School of Medicine

Objective/Purpose: The Education-Centered Medical Home (ECMH is a program, developed at the Northwestern University Feinberg School of Medicine, that allows medical students of all levels of education to help manage patients in a primary care setting. This program allows medical students to achieve continuity of care with a variety of complex medical patients, a relationship that may be lacking in “traditional” medical school curricula. The ECMH model, being novel in nature, requires student feedback in order to accomplish its initial objectives. In order to accomplish this, an internal quality improvement project was developed to evaluate student’s perspectives and implement their input.

Need for Innovation/Practice: Current medical education (2 years of basic science and 2 years of clinical practice) provides few opportunities for students to achieve continuity with patients since clerkships are usually four week blocks. This fact led to the idea of providing students with a model that provides opportunities to track patients and intervene in ways that improve clinical outcomes.

Methods, Materials and Resources used: A 26-item questionnaire was developed and delivered to the

students involved in ECMH. The questionnaire was divided into 26 questions that had a scale from 1 through 5 (strongly disagree to strongly agree) with questions regarding to ownership of patients, diversity of population, continuity of care, opportunities for patient advocacy and learning of skills, direct observation and formative feedback by preceptor.

Outcomes : One hundred and eighty one students out of the 300 involved in ECMH completed the survey. Greater than 75% of students agreed or strongly agreed that the ECMH model provided a satisfactory learning opportunity (physical exam, communication skills and medical knowledge). Approximately 65% of students reported benefits in cultural competence along with exposure to a diverse group of patients. Seventy six percent of students saw ECMH as an environment that promoted patient advocacy. In addition, greater to 80% of students agreed or strongly agreed that they were directly observed by their preceptor during clinic and have received formative feedback on their skills. Around 40% of the students agreed or strongly agreed that they had achieved continuity with a group of patients.

Strengths and Areas for Improvement: The majority of students agreed that exposure to a diverse patient population; opportunities for patient advocacy and learning of skills; and direct observation and formative feedback by preceptor were areas of strength. A major area of improvement, based on the survey, is patient continuity. Sixty percent of students found that the model still does not provide opportunities for meaningful continuity, which could be due to difficulty scheduling patients on days that students attend the clinic.

Feasibility of Program Maintenance/Transferability: Even though, the planning and organization of this innovative model has posed many different challenges, this project has not only been able to be maintained but it has also expanded to include more students each year which speaks to the feasibility of the project and its ability to be transferred to other schools as part of the medical education.

109. Creating a Clinical Skills Curriculum for First Year Medical Students

Kristen Rundell, The Ohio State University

Need for Innovation: As a part of the new Lead Serve Inspire (LSI) Curriculum at the Ohio State University Medical School, each first year medical student needs to be competent in a set of pre-approved clinical skills prior to participating in their ambulatory experience starting in the third month. The purpose of this project was to create a skills training program that provided medical knowledge, practical instruction and adequate practice time so that students could be assessed for knowledge and competency through direct observation. This required coordination with the Department of Clinical Education for trained instructors, the Simulation Department for training space and additional trainers as well as the IT Department for ease of collecting data and assessment analysis.

Methods, Materials and Resources used: The Skills Training Program consisted of BLS training, venipuncture, injection technique, EKG lead placement, vital signs, oxygen administration and pulse oximetry, respiratory measure and treatment, peak flow and MDI, visual acuity, hand hygiene sterile technique/universal precautions. Nurse instructors prepared modules and workstations for each student. The students were assigned the self-directed learning modules with assessment quizzes prior to attending the workstation. Each workstation consisted of three to six students. A trainer provided a short instructional didactic and demonstration. Each student then practiced the new skill and was given feedback. After this session, students gained more experience if need during several supervised practice sessions. Then each student was assigned a specific assessment time. During the assessment, trainers entered the student's results into their iPads as part of their portfolio. If the student did not pass the skill, they completed reassessment.

Outcomes : After the first year of the program, only 25% of the students passed all of the skills without further instructions and 25% needed reassessment for more than three skills. This past year 50% passed all of the skills and less than 1% needed reassessment for more than three skills.

Strengths and Areas for Improvement: The recognized strengths were the self-directed teaching modules, adequate teaching space, number of experience trainers and onsite IT support. In addition, several scheduled supervised practice session allowed for individual learning.

The gaps and goals for the next year are to standardize the instructors with a pre-clinical assessment workshop. This will ensure that each instructor is teaching the same material and each trainer is using the

same guidelines for assessment.

Feasibility of Program Maintenance/Transferability: We hope that we can offer some ideas for other program that are looking to create a clinical skills training program.

110. Service in the Preclinical years: “Instilling the Mission and Vision of OUWB”

Tracy Wunderlich and Rose Wedemeyer, OUWB

Objective/Purpose: We outline a new medical school's approach to fulfill its vision of promoting, maintaining, and restoring health to individuals and communities served by the school and its graduates.

Need for Innovation/Practice: The changing nature of healthcare and increased needs of patients makes it imperative for medical schools to develop competent community based physicians. However, traditional didactic learning does not afford preclinical students opportunities to gain first-hand experiences and develop necessary skillsets. Community service and service-learning unites volunteer service and the practice of “soft skills” while promoting health, wellness, disease prevention, and health literacy). Further, “community service enhances civic involvement” encouraging medical students to take an active role in the lives of their future patients.

Methods, Materials and Resources used: Both curricular and co-curricular opportunities offered through COMPASS -our center for community engagement have enabled our students to get involved. Faculty development facilitated the integration of service learning directly into courses allowing students to connect curricular content with real-world, hands on experiences while meeting community needs. Co-curricular services aids students in reinforcing skills by moving from the classroom to the community while developing an appreciation for service [or] making a difference in the surrounding community. Clinical and non-clinical offerings in several areas include health promotion and disease prevention, doctor-patient communication, screenings and vaccinations, food and housing insecurities Through community organization partnerships and programs, students gain a holistic view of approaching health problems in the community.

Outcomes : In the last 3 years, preclinical students engaged with over 50 community organizations and participated in service-learning in five courses. Students logged nearly 4000 hours of community service, service-learning and community engagement initiatives at OUWB. Not only does COMPASS programming fulfill LCME accreditation standards, but student feedback indicates both positive experiences and appreciation of community involvement.

Strengths and Areas for Improvement: OUWB's service and service-learning programs' strength lies in the institutional support and engrained desire to engage the community. Students are offered a wide array of experiences while allowing the institution to have an impact on many community constituents. Currently, students provide feedback on their experiences, however it is important to gain an understanding of the impact on the community through evaluation of their experiences as well as the experiences of faculty and staff by conducting a 360 evaluation.

Feasibility of Program Maintenance/Transferability: The OUWB model for service and service learning is designed to ensure long term success and is one that can be transferred to other schools and programs.

111. Effectively Reviewing Curricular Components: Lessons Learned from Systematic Reviews of Clerkships, *Tony Ribera, Indiana University*

Objective/Purpose: The primary objectives of the Academic Standards Committee (ASC) at the Indiana University School of Medicine (IUSM) are to review components of the curriculum, identify areas in need of attention, and work with faculty to establish goals to improve the curriculum. The purpose of this poster is to describe the ASC curricular component review process, specifically the reviews of individual clerkships. This poster will also highlight the lessons learned from the committee's first wave of reviews and the improvements made to the current clerkship review process.

Need for Innovation/Practice: This practice emerged from calls in the medical education and evaluation literature (e.g., Frye & Hemmer, 2012; Patton, 2000) as well as the Liaison Committee on Medical Education (LCME). The LCME requires all medical schools to systematically monitor the overall quality and outcomes of individual clerkships. Additionally, medical schools must ensure that the clinical

curriculum includes comparable educational experiences and equivalent methods of assessment across all sites.

Methods, Materials and Resources used: A diverse, multi-disciplinary review team, including basic science and clinical faculty, medical students, and educational staff, examine documents (e.g., syllabi, clerkship questionnaire), evaluations (e.g., clerkship evaluations, AAMC GQ), and outcomes data (e.g., exam scores) to better understand the strengths and areas in need of attention for the specific clerkship. This review committee then presents a summary of their findings and recommendations to the larger committee to allow for further discussion. Following a thorough review, the review team leader, committee chair, and Director of Program Evaluation for Undergraduate Medical Education meet with the Clerkship Director to share the findings and discuss appropriate action plans.

Outcomes : Multiple action plans to improve teaching and better promote student learning have stemmed from these clerkship reviews, including, but not limited to, revision of learning objectives, greater statewide educational equivalence, and improved formative feedback processes.

Strengths and Areas for Improvement: In addition to providing an opportunity for meaningful collaboration among faculty, staff, and students, this past academic year, ASC developed a new questionnaire for Clerkship Directors to complete that better aligned with LCME forms and addressed several LCME Standards. Although changes were made in regards to monitoring the implementation of action plans, this remains an area for improvement.

Feasibility of Program Maintenance/Transferability: Curricular component reviews have become part of the institutional culture. They are the ASC's primary charge and Clerkship Directors are aware of their responsibilities pertaining to active participation in these reviews.

112. Introduction of EMR for Subinternship Assessment

Meenakshy Aiyer, University of Illinois-Chicago

Objective/Purpose: The primary objective is to:

Integrate an Electronic Medical Record (EMR) into medical student assessment following the completion of the 4th year subinternship. Utilize EMR to assess the ability to complete orders in a standardized test setting

Need for Innovation/Practice: EMR has replaced paper documentation in the majority of health centers in the US. Medical students need to acquire the knowledge and skills to effectively utilize and navigate an EMR prior to transition to residency. Health systems have struggled integrating students into the EMR, with some centers excluding students from documentation and limiting their involvement. Given the challenges related to the EMR, innovation is needed to develop the required knowledge and skill in graduating students.

Methods, Materials and Resources used: Students at our institution participate in a 5 station Objective Structured Clinical Examination (OSCE) at the end of subinternship. The stations include completing discharge orders including medication reconciliation; calling the primary care provider after completing the orders; calling a consultant, disclosing a medical error and delivering bad news. In collaboration with University faculty, EMR staff completed a "build" of each patient, creating an electronic chart containing documentation, labs, and imaging. The EMR refreshes following each OSCE, and each student is assigned an individual login. The pilot program was implemented in 2014-2015. Students review the chart prior to each station, and then complete required tasks, including discharge orders, medication reconciliation, and documentation. Evaluation checklists and a global rating scale was developed based on literature review and faculty consensus.

Outcomes: 20 students have participated in the OSCE, with minor adaptations to the charts made based on learner and faculty feedback. We are currently in the process of compiling the results of the rating scales and faculty assessments.

Strengths and Areas for Improvement: Student feedback has highlighted the "realism" of the OSCE, and the ability to independently complete tasks and receive feedback in EMR is highly rated. Areas for improvement include electronic feedback given to the learner, and ability to save input in the EMR.

Feasibility of Program Maintenance/Transferability: Utilizing EMR as an assessment tool is feasible.

Collaboration of faculty and technical support, as well as dedication of technical resources is critical to maintaining the “patients” within EPIC. The next phase is to expand to assessment of incoming interns, and to perform validity studies.