EDUCATION RESEARCH DAY

Icahn School of Medicine at Mount Sinai

Institute for Medical Education

April 28, 2015

Sponsored by the Institute for Medical Education
Education Research Day 2015

Welcome to the Institute for Medical Education (IME) at the Icahn School of Medicine’s twelfth annual Education Research Day (ERD). It is exciting to see the breadth of innovative medical education scholarship developed by our faculty, trainees, students and staff. Each year we welcome an expanding group of educators from all disciplines and levels of training. We are proud to display the excellent work being done in education research at the Icahn School of Medicine at Mount Sinai and our affiliate institutions.

There are three goals for ERD:
1. To highlight and disseminate the educational research and innovative curriculum development at Mount Sinai and its affiliate institutions.
2. To provide a forum for educators to learn from each other and collaborate.
3. To prepare authors for regional and national presentation and dissemination of their scholarly educational work.

All submitted abstracts were reviewed by a selection committee. Reviewers were blinded and abstracts were evaluated based upon established criteria for scholarship in education: Clear Goals, Appropriate Methods, Measures of Quality/Effectiveness, Significant Results and Reflective Critique. Innovation and impact of the project were also considered.

This year, five abstracts were chosen from 57 submitted to receive Blue Ribbons. Blue Ribbon Winners represent outstanding examples of educational scholarship. The top two Blue Ribbon Winners have been invited to present at Medical Education Grand Rounds during the 2015 – 2016 season.

In addition, we are very pleased to continue the “Facilitated Poster Walk and Discussion” at ERD this year. This began in 2013 to allow authors the opportunity to present their work, obtain feedback and gain valuable ideas from colleagues and peers in a structured manner. Abstracts have been organized into thematic groups and we have invited distinguished faculty to lead a discussion of the posters in a group with authors and visitors. Please review the schedule of these walks and join in to learn more.

We wish to thank the Selection Committee, the Department of Medical Education, and the authors who submitted their work. Congratulations to all of our authors for their dedication to education research and for sharing their innovative work with our community.

Reena Karani, MD, MHPE
Director, Institute for Medical Education
Icahn School of Medicine at Mount Sinai

Robert Fallar, PhD
Assistant Director, Institute for Medical Education
Icahn School of Medicine at Mount Sinai
Education Research Day Selection Committee

Selection committee members did not participate in the discussion or voting for abstracts in which they were involved.

The 2015 Selection Committee:

<table>
<thead>
<tr>
<th>Name</th>
<th>Affiliation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Linda DeCherrie, MD</td>
<td>Icahn School of Medicine at Mount Sinai</td>
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<tr>
<td>Robert Fallar, PhD</td>
<td>Icahn School of Medicine at Mount Sinai</td>
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<td>Andrew Goldberg, MD</td>
<td>Icahn School of Medicine at Mount Sinai</td>
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<td>Basil Hanss, PhD</td>
<td>Icahn School of Medicine at Mount Sinai</td>
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<td>Joanne Hojsak, MD</td>
<td>Icahn School of Medicine at Mount Sinai</td>
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<td>Reena Karani, MD, MHPE</td>
<td>Committee Chair, Icahn School of Medicine at Mount Sinai</td>
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<td>Leora Mogilner, MD</td>
<td>Icahn School of Medicine at Mount Sinai</td>
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<td>Lauren Pecoraro, MD</td>
<td>Icahn School of Medicine at Mount Sinai</td>
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<td>Jonathan Ripp, MD</td>
<td>Icahn School of Medicine at Mount Sinai</td>
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<td>Stefan Samuelson, MD</td>
<td>Icahn School of Medicine at Mount Sinai</td>
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<tr>
<td>Christine SanGiovanni, MD</td>
<td>Icahn School of Medicine at Mount Sinai</td>
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<td>Rainier Soriano, MD</td>
<td>Icahn School of Medicine at Mount Sinai</td>
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<tr>
<td>David Thomas, MD, MHPE</td>
<td>Icahn School of Medicine at Mount Sinai</td>
</tr>
</tbody>
</table>
Education Research Day Program – April 28, 2015

Poster Display
10:00 am – 4:00 pm
Guggenheim Pavilion Atrium

Facilitated Poster Walk and Discussion

<table>
<thead>
<tr>
<th>Time</th>
<th>Facilitator</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:00 – 11:00 am</td>
<td>Rob Fallar, PhD</td>
<td>Assessment (posters 1 – 6)</td>
</tr>
<tr>
<td>10:30 – 11:30 am</td>
<td>Peter Gliatto, MD</td>
<td>Curriculum – UME (posters 7 – 11)</td>
</tr>
<tr>
<td>11:00 – 12 noon</td>
<td>David Thomas, MD, MHPE</td>
<td>Curriculum – GME (posters 12 – 18)</td>
</tr>
<tr>
<td>11:30 – 12:30 pm</td>
<td>David Muller, MD</td>
<td>Professional Development (posters 19 – 25)</td>
</tr>
<tr>
<td>12 noon – 1:00 pm</td>
<td>Natasha Anandaraja, MD, MPH</td>
<td>Global Health (posters 26 – 29)</td>
</tr>
<tr>
<td>12:30 – 1:30 pm</td>
<td>Reena Karani, MD, MHPE</td>
<td>Simulation I (posters 30 – 33)</td>
</tr>
<tr>
<td>1:00 – 2:00 pm</td>
<td>Yasmin Meah, MD</td>
<td>Community Health (posters 34 – 38)</td>
</tr>
<tr>
<td>1:30 – 2:30 pm</td>
<td>Dennis Chang, MD</td>
<td>Quality Improvement (posters 39 – 43)</td>
</tr>
<tr>
<td>2:00 – 3:00 pm</td>
<td>Brijen Shah, MD</td>
<td>Patient Safety (posters 44 – 47)</td>
</tr>
<tr>
<td>2:30 – 3:30 pm</td>
<td>Leora Mogilner, MD</td>
<td>Interpersonal Skills (posters 48 – 51)</td>
</tr>
<tr>
<td>3:00 – 4:00 pm</td>
<td>Andrew Goldberg, MD</td>
<td>Simulation II (posters 52 – 57)</td>
</tr>
</tbody>
</table>
Selected for Blue Ribbons and to present at Medical Education Grand Rounds:

Abstract #10
Health Literacy in Transitions of Care: An Innovative Curriculum and Objective Structured Clinical Examination for Fourth Year Medical Students
Ariana Witkin BA, Dana Casey BA, Lianna Lipton BS, Peter Gliatto MD, Reena Karani MD, MHPE

Abstract #34
Recipe for a Healthy Lifestyle: An Obesity Prevention Program for Hispanic Mothers of Children Ages 0-5 in East Harlem, New York
Lindsey Waldman MD, RD, Marilyn Figueroa RD, Heather Mitchell LMSW, Leora Mogilner MD

Selected for Blue Ribbons:

Abstract #23
The Quantity of Faculty Evaluations Does Not Translate into the Perception of Quality Feedback for Residents
Joseph Blankush BA, Brijen Shah MD, Sophie Church BA, Gaber Badran BS, Paul Johnson MFA, Scott Barnett MD, Michael Leitman MD

Abstract #33
Grace under Fire: Identifying Predictors of Engagement and Success in Simulation-based Education
Stefan Samuelson MD, Andrew Goldberg MD, Hardikkumar Shah BS, Alan Weinberg MS, Anthony DeMaria PhD, Samuel DeMaria MD

Abstract #39
The Effects of an Educational Intervention and Changes to the EMR on Screening for Post-Partum Depression in an Inner City Pediatric Clinic
Suzanne Friedman MD, Ellis Rochelson MD, Robert Fallar PhD, Leora Mogilner MD
ABSTRACT LIST
<table>
<thead>
<tr>
<th>Poster #</th>
<th>Title</th>
<th>Author(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Development of an Advance Care Planning Communication Evaluation Tool</td>
<td>Jacqueline Yuen MD, Stephen Berns MD, Reena Karani MD, MHPE</td>
</tr>
<tr>
<td>2</td>
<td>Initial Milestones Comparisons: Residents and Attendings</td>
<td>Amy Yao BS, Lester Silver MD, Peter J Taub MD</td>
</tr>
<tr>
<td>3</td>
<td>Clinical Impact of Three Distinct Educational Modules on HCV Screening in Primary Care Clinic</td>
<td>Aparna Goel MD, Colin Feuille MD, Brijen Shah MD</td>
</tr>
<tr>
<td>4</td>
<td>Evaluating an Online Training to Promote Standardized Medical Student Feedback on Reflective Writing</td>
<td>Jacquelin Rankine BA, Jocelyn Jiao MS, Lauren Feld BA, Hannah Oakland BA, Salina Bakshi BA, Jillian Nickerson BA, Yasmin Meah MD, Allison Gault MD</td>
</tr>
<tr>
<td>5</td>
<td>Assessing Medical Student Preparedness for an Era of Personalized Medicine</td>
<td>Caroline Eden BA, Noura S. Abul-Husn MD</td>
</tr>
<tr>
<td>6</td>
<td>Does the Extent of Medical Student Reflection Correlate with their Grade in an Emergency Medicine Clerkship?</td>
<td>Amy Leuthauser MD MS, Michael Chary PhD, Kevin Hu MD, Braden Hexom MD</td>
</tr>
<tr>
<td>7</td>
<td>MedDOCS: Increasing Student Retention in Youth Education Programs</td>
<td>Matthew Anderson BS, Brian Cohen BA, James Connolly BA, Efe Ghanney BA, Yiting Chen BA, Anna Liang BS, Nicholas Titelbaum BS, Stephen Trinidad BS, Hooman Poor MD, Ann-Gel Palermo DrPH, MPH</td>
</tr>
<tr>
<td>8</td>
<td>Preseason Pediatrics: Outcomes from Year One of a Preclinical Curriculum for Medical Students</td>
<td>Benjamin Laitman MS, Scott Moerdler MD, Suzanne Friedman MD, Blair Hammond MD, Alefiyah Malbari MD, Kathleen Gibbs MD</td>
</tr>
<tr>
<td>9</td>
<td>Innovations in Undergraduate Medical Education: A Novel Elective for Third Year Medical Students, Emergency Critical Care</td>
<td>Amy Leuthauser MD, MS</td>
</tr>
<tr>
<td>10</td>
<td>Health Literacy in Transitions of Care: An Innovative Curriculum and Objective Structured Clinical Examination for Fourth Year Medical Students</td>
<td>Ariana Witkin BA, Dana Casey BA, Lianna Lipton BS, Peter Gliatto MD, Reena Karani MD</td>
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</tr>
<tr>
<td>11</td>
<td>Continued Development of the Role of Teaching Assistants in Mount Sinai's 'Structures' Course</td>
<td>Patrick Maffucci BA, Benjamin Laitman MS, Jeffrey Laitman PhD</td>
</tr>
<tr>
<td>12</td>
<td>A Model for Integrating the Assessment and Management of Geriatric Syndromes into Internal Medicine Continuity Practice: 5 Year Report</td>
<td>Christine Chang MD, Eileen Callahan MD, William Hung MD, David Thomas MD, Rosanne Leipzig MD, Linda DeCherrie MD</td>
</tr>
<tr>
<td>14</td>
<td>Residency Enhancement through Adult Learning in Neurology (REAL Neurology)</td>
<td>Hazem Shoirah MD, Achillefs Ntranos MD, Stephen Krieger MD</td>
</tr>
<tr>
<td>15</td>
<td>Can an ECG Elective be Developed that Meets the FAIR Principles?</td>
<td>Kaushal Shah MD, Felipe Teran Merino MD</td>
</tr>
<tr>
<td>16</td>
<td>Effectiveness of 'Pimping' as a Teaching Method in the Emergency Department</td>
<td>Felipe Teran Merino MD, Sumintra Wood MD, Suzanne Bentley MD, Reuben Strayer MD, Daniel Lakoff MD, Kaushal Shah MD</td>
</tr>
<tr>
<td>18</td>
<td>Teaching Geriatric Concepts in Internal Medicine (IM) Residency Continuity Practice does not Impact Clinical Practice</td>
<td>Christine Chang MD, Eileen Callahan MD, William Hung MD, David Thomas MD, Rosanne Leipzig MD, Linda DeCherrie MD</td>
</tr>
<tr>
<td>19</td>
<td>Mentorship and Longitudinal Integrated Clerkships: A Pilot Study</td>
<td>Allison Gault MD, Robert Fallar PhD, Cinthia Delarosa MPH, Yasmin Meah MD, David Thomas MD</td>
</tr>
<tr>
<td>20</td>
<td>Making the Match: Characteristics of Successful Applicants to the Urology Match</td>
<td>Fatima Husain MD, Steve Weissbart MD, Jeffrey Stock MD</td>
</tr>
<tr>
<td>21</td>
<td>What's the Big Deal with Mentoring? An Analysis of Residents' Attitudes and Perceptions of Mentoring</td>
<td>Christine SanGiovanni MD, Elizabeth Berg MD, Kathleen Gibbs MD</td>
</tr>
<tr>
<td>22</td>
<td>Surgical Representation on Medical School Faculty Development Committees</td>
<td>Rami Sherif BA, Michael Leitman MD, Peter Taub MD</td>
</tr>
<tr>
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</tr>
<tr>
<td>24</td>
<td>Mindfulness for Hospitalists: A Pilot Study Investigating the Effect of a Mindfulness Initiative on Mindfulness and Perceived Stress among Hospitalists</td>
<td>Sumedha Chablani BA, Vinh-tung Nguyen MD, Dennis Chang MD</td>
</tr>
<tr>
<td>25</td>
<td>A Longitudinal Approach to Developing Educators in Medicine: The Pediatric Resident Teaching Group</td>
<td>Scott Moerdler MD, Suzanne Friedman MD, Benjamin Laitman MS, Alefiyah Malbari MD, Kathleen Gibbs MD, Blair Hammond MD</td>
</tr>
<tr>
<td>26</td>
<td>Development and Implementation of a Novel Electrocardiography Curriculum to Family Medicine Residents in the Dominican Republic</td>
<td>Aparna Dandekar MD, Josefina Olivares MD, Manuel Lopez-Zapata MD, Arisnachy Diaz MD, Suzanne Bentley MD, MPH</td>
</tr>
<tr>
<td>27</td>
<td>Development and Implementation of a Novel Long Acting Contraception Curriculum to Family Medicine Residents in the Dominican Republic</td>
<td>Aparna Dandekar MD, Josefina Olivares MD, Manuel Lopez-Zapata MD, Arisnachy Diaz MD, Suzanne Bentley MD, MPH</td>
</tr>
<tr>
<td>28</td>
<td>Airway Training Module as Effective Supplemental Emergency Skills Training for Non-Emergency Medicine Trained Providers in the Dominican Republic</td>
<td>Ben McVane MD, Natasha Desai MD, Suzanne Bentley MD, MPH</td>
</tr>
<tr>
<td>29</td>
<td>Palliative Care Education and Training Workshop for Caregivers of Cancer Patients in Ghana</td>
<td>Efe Ghanney BA, Doreen Mensah MD, Edwina Addo MD, Diane Meier MD</td>
</tr>
<tr>
<td>30</td>
<td>Validation of Simulated TEE Pathology Modules and Impact of Screen Based TEE Simulation Instructions during Anesthesiology Residency</td>
<td>Erick Mendoza BA, Sang Kim MD, Samuel DeMaria, Jr. MD, Julian Bick MD, Sasha Shilcutt MD, Muoi Trihn MD</td>
</tr>
<tr>
<td>31</td>
<td>Residents as Educators: Simulation Case development for Pediatric Residents</td>
<td>Sheera Minkowitz MD, Keila Veiga MD, Sheemon Zackai MD</td>
</tr>
<tr>
<td>32</td>
<td>The Influence of Death in Simulation-based Anesthesiology Training: How much is too much?</td>
<td>Stefan Samuelson MD, Andrew Goldberg MD, Hardikkumar Shah BS, Alan Weinberg MS, Anthony DeMaria PhD, Samuel DeMaria MD</td>
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</tr>
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<td>Grace under Fire: Identifying Predictors of Engagement and Success in Simulation-based Education</td>
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</tr>
<tr>
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<td>Recipe for a Healthy Lifestyle: An Obesity Prevention Program for Hispanic Mothers of Children Ages 0-5 in East Harlem, New York</td>
<td>Lindsey Waldman MD, RD, Marilyn Figueroa RD, Heather Mitchell LMSW, Leora Mogilner MD</td>
</tr>
<tr>
<td>35</td>
<td>Characteristics of Patients Offered Rapid HIV Testing in the Emergency Department and Barriers to Testing</td>
<td>Christie Lech MD, Ericka Jaramillo BA, Joseph Zaheer BA, Suzanne Bentley MD, Alex Manini MD, Stuart Kessler MD, Philip Fairweather MD</td>
</tr>
<tr>
<td>36</td>
<td>A Community-based Approach to Improving Health Literacy on Pediatric Health Topics Identified by Immigrant Parents</td>
<td>Lara Crystal-Ornelas BA, Dorothy Calvani RN, Cappy Collins MD, Alexandra Leader MD, Leora Mogilner MD, Ann-Gel Palermo DrPH</td>
</tr>
<tr>
<td>37</td>
<td>You've Got Books: Reach Out and Read at Three New York City Sites</td>
<td>Leora Mogilner MD, Cynthia Katz MD, Thomas Chavez MD, Marcy Stein-Albert MD</td>
</tr>
<tr>
<td>38</td>
<td>SinaiPAC: Development and Impact of the Pediatric Advocacy Club at Mount Sinai Kravis Children's Hospital</td>
<td>Tessa Scripps MD, Brittany Solar MD, Genna Ableman MD, Cappy Collins MD, Leora Mogilner MD</td>
</tr>
<tr>
<td>39</td>
<td>The Effects of an Educational Intervention and Changes to the EMR on Screening for Post-Partum Depression in an Inner City Pediatric Clinic</td>
<td>Suzanne Friedman MD, Ellis Rochelson MD, Robert Fallar PhD, Leora Mogilner MD</td>
</tr>
<tr>
<td>40</td>
<td>Do US Medical Graduates Know How to Use Screens for Cognitive Disorders and Falls?</td>
<td>Christine Chang MD, Eileen Callahan MD, William Hung MD, David Thomas MD, Rosanne Leipzig MD, Linda DeCherrie MD</td>
</tr>
<tr>
<td>41</td>
<td>Redesigning the Electronic Health Record to Improve Advance Care Planning</td>
<td>Christine Chang MD, Shahla Baharlou MD, Alan Briones MD, Maribel Jacome BA, Francis Alphonso BA, Stephen Berns MD</td>
</tr>
<tr>
<td>42</td>
<td>Using Quality Improvement Strategies to Improve Advance Care Planning at an Academic Geriatric Primary Care Clinic</td>
<td>Christine Chang MD, Beata Chauhan DO, Amy Kelley MD, Shahla Baharlou MD, Alan Briones MD, Maribel Jacome BA, Francis Alfonso BA, Stephen Berns MD</td>
</tr>
<tr>
<td>43</td>
<td>Patient Preoperative Physical Status Assignment Varies Significantly by Department</td>
<td>Christopher Curatolo MD, Andrew Goldberg MD, Muoi Trinh MD</td>
</tr>
<tr>
<td>Poster #</td>
<td>Title</td>
<td>Author(s)</td>
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</tr>
<tr>
<td>44</td>
<td>Redesigning Morbidity and Mortality Conference in Emergency Medicine</td>
<td>Felipe Teran Merino MD, Suzanne Bentley MD, Benjamin Schnapp MD, Kaushal Shah MD</td>
</tr>
<tr>
<td>45</td>
<td>Why Perioperative Errors Occur and How to Fix Them</td>
<td>Christopher Curatolo MD, Patrick McCormick MD, Jaime Hyman MD, Yaakov (Jake) Beilin MD</td>
</tr>
<tr>
<td>46</td>
<td>Impact of Resident Participation on the Outcomes of Outpatient Plastic Surgery Procedures</td>
<td>Benjamin Massenburg BA, Paymon Sanati-Mehrizy BA, Eric Jablonka MD, Peter Taub MD</td>
</tr>
<tr>
<td>47</td>
<td>Is Faulty Knowledge the Most Common Cause of 72-Hour Returns in an Emergency Department Residency Program?</td>
<td>Benjamin Schnapp MD, Jean Sun MD, Courtney Cassella MD, Candice Cruz MD, Sumintra Wood MD, Clark Owyang MD, Zara Mathews MD, Bradley Shy MD, Reuben Strayer MD, Kaushal Shah MD</td>
</tr>
<tr>
<td>48</td>
<td>Assessing Empathy Shifts in Medical Students Transitioning from Pre-clinical to Clinical Years</td>
<td>Prapti Chatterjee BA, Kaylan Baban MD, MPH</td>
</tr>
<tr>
<td>49</td>
<td>Strong Correlations between Empathy, Emotional Intelligence and Personality Traits in Podiatric Medical Students</td>
<td>Peter Barbosa PhD, Kurtis Bertram BS, John Randazzo BS, Nathaniel Alabi BS, Jack Levenson BS, John T. Doucette PhD</td>
</tr>
<tr>
<td>50</td>
<td>Assessing the Psychological Impact of Medical Student Participation in the Hurricane Sandy Relief Effort</td>
<td>Phoebe Prioleau MPH, David Anderson BA, Robert Yanagisawa MD, Craig Katz MD</td>
</tr>
<tr>
<td>51</td>
<td>A Comparison of Individualized Feedback vs. Standard Didactic Lecture to Teach Interpersonal Communication Skills to Emergency Medicine Residents: A Multicenter Randomized Controlled Trial</td>
<td>Melissa Leber MD, Chen He MD, Saadia Akhtar MD, Shellie Asher MD, Theodore Bania MD, Christopher Di BA, Eric Steinberg DO, Allison Webster MD, Mark Clark MD</td>
</tr>
<tr>
<td>52</td>
<td>The Evaluation of Different Compositions of Ultrasonographic Contrast for Confirmation of Central Venous Catheter Placement</td>
<td>Michael Doctor MD, Sebastian Siadecki MD, Gabriel Rose DO, Rachel Berkowitz MD, Danielle Matilsky MD, Turandot Saul MD</td>
</tr>
<tr>
<td>53</td>
<td>An Assessment of the Ultrasound Curricula of Osteopathic Emergency Medicine Residencies</td>
<td>Nicholas Avitabile DO, Nicole Kaban MD, Resa Lewiss MD, Turandot Saul MD</td>
</tr>
<tr>
<td>Poster #</td>
<td>Title</td>
<td>Author(s)</td>
</tr>
<tr>
<td>---------</td>
<td>-----------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>54</td>
<td>Emergency Resident Driven Procedural Series to Improve Understanding</td>
<td>Candice Cruz MD, Ram Parekh MD</td>
</tr>
<tr>
<td></td>
<td>and Ability to Perform Emergency Procedures</td>
<td></td>
</tr>
<tr>
<td>55</td>
<td>The Effects of Cardiac Arrest Simulation on Healthcare Providers'</td>
<td>Christie Lech MD, Kevin Hu MD, Peter England MD, Suzanne Bentley MD, MPH, Stuart Kessler MD</td>
</tr>
<tr>
<td></td>
<td>Adherence to Advanced Cardiac Life Support Algorithms and Individual/Group Perceived Performance</td>
<td></td>
</tr>
<tr>
<td>56</td>
<td>Real Time Simulation: A Novel Curricular Approach to Enhance Critical</td>
<td>Suzanne Bentley MD, MPH, Gurpreet Mudan MD, Angela Hua MD, Neil Singh MD</td>
</tr>
<tr>
<td></td>
<td>Care Education for Emergency Medicine Residents</td>
<td></td>
</tr>
<tr>
<td>57</td>
<td>Teaching Cognitive Errors: Simulation Is Not Better Than Lecture</td>
<td>Benjamin Schnapp MD, Kaushal Shah MD</td>
</tr>
</tbody>
</table>
ASSESSMENT (GME)

ABSTRACTS 1 – 3
ABSTRACT 1

Development of an Advance Care Planning Communication Evaluation Tool

Authors: Jacqueline Yuen MD, Stephen Berns MD, Reena Karani MD, MHPE

Purpose: Advance care planning (ACP) communication is essential to the care of older adults to ensure that patient's preferences and goals for care are met. However, many internal medicine (IM) residents report lack of comfort with discussing ACP particularly in the outpatient setting. To address this need, an innovative ACP curriculum was developed for IM trainees. To evaluate the curriculum's impact on trainee communication skills, an ACP communication evaluation tool is needed but no such tool exists in the literature. Our objective is to develop an evaluation tool to assess trainee ACP communication skills based on real-time observation of clinical encounters.

Methods: We conducted a literature review and consulted with 4 content experts to identify the key steps in the ACP process and compiled the communication tasks for each step into a checklist. A training manual with working definitions of each task was also developed. The checklist was piloted with 6 faculty members with expertise in communication skills who evaluated videotapes of simulated resident OSCE encounters with a standardized patient conducted before and after receiving the ACP curriculum. The group convened to identify disagreements and refined the tool to enhance its clarity and discriminating ability. Multiple iterations were made until agreement was reached by all in the evaluation of 6 videotaped encounters.

Results: Our ACP communication evaluation tool consists of 5 key steps in ACP communication and 30 distinct communication tasks. The tool adopted communication tasks from the validated SEGUE Framework for communication assessment, FAMCAT observation tool and the ACGME IM Milestones.

Conclusion: Our ACP communication evaluation tool consists of communication tasks that can be used for assessment of learner’s skills for curriculum evaluation. Our next steps are to determine the usability and reliability of the tool through evaluation of our pre and post-curriculum OSCE of 30 IM trainees as well as its value as a teaching and learning feedback tool that can be used for assessment of an ACGME Entrustable Professional Activity.
Initial Milestones Comparisons: Residents and Attendings

Authors: Amy Yao BS, Lester Silver MD, Peter J Taub MD

Purpose: Graduate medical education has recently undergone a shift towards competency-based evaluations of resident performance. The implementation of the Milestones program by the Accreditation Council for Graduate Medical Education (ACGME) is a core component of this shift. It is designed to ensure uniformity in measuring residency knowledge using a series of specialty-specific achievements. The Milestones are part of the comprehensive Next Accreditation System (NAS). The objective of this study was to determine the correlation between residents' self-evaluations and program directors' assessments of their performance.

Methods: The study population comprised twelve residents across six years from a single ACGME-approved, integrated training program in Plastic Surgery. The program’s Clinical Competency Committee (CCC) evaluated each resident in each of the 36 milestones. The residents then evaluated him/herself in the same 36 Milestones. Scores ranged from level 1 to level 5. The various scores were then compared.

Results: At all levels except PGY-6, average attending scores were lower than average resident scores. The correlation between residents’ and attendings’ evaluations ranged from 0.417 to 0.957, with the correlation of average scores of patient care (0.854) and medical knowledge (0.816) milestones significantly higher than those of professional skillsets (0.581), such as ethics and communication skills. Patient care of facial aesthetics was the milestone with the lowest average score from both attendings and residents. Residents scored themselves notably higher than their attendings’ evaluations in practice-based learning and improvement categories (+0.958) and notably lower in medical knowledge categories such as cosmetic surgery of the trunk and lower extremities (-0.375) and non-traumatic surgery of the hand (-0.208).

Conclusion: The range of correlations suggests that expectations for performance standards may vary widely between residents and attendings. Understanding gaps between expectations and performance is vital to inform current and future residents as restructuring of the resident training process continues to evolve.
Clinical Impact of Three Distinct Educational Modules on HCV Screening in Primary Care Clinic

Authors: Aparna Goel MD, Colin Feuille MD, Brijen Shah MD

Purpose: The CDC amended hepatitis C virus (HCV) screening guidelines in August 2012 to include one-time testing for individuals born between 1945 and 1965. New York State subsequently passed legislation that took effect January 2014 requiring healthcare providers to offer birth cohort screening and link positive persons to care for patients receiving primary care. Screening rates in the internal medicine primary care clinic remain low. Our goal is to assess the knowledge and clinical impact of three distinct self-study educational modules on HCV screening rates within a specific clinic.

Methods: The site was Mount Sinai Internal Medicine Associates (IMA), where 132 internal medicine residents have their primary care clinic. HCV screening data was abstracted from the electronic medical record of all encounters between July 1, 2014 and October 31, 2014 for patients born between 1945 and 1965. Charts were examined for documentation of known HCV infection or HCV screening performed elsewhere. All remaining patients were considered unscreened. A 10-question quiz assessing knowledge of HCV epidemiology, screening practices and treatment was sent to all residents at the end of September. Residents were subsequently divided into four arms; one group was the control and the other three received a unique educational module. The three educational modules were created with different learning styles - process only, didactic, and interactive case-based questions. Changes in HCV screening rates will be compared among these groups.

Results: Monthly screening rates among those not previously screened or diagnosed with HCV were 21.2%, 16.9%, and 12.7% for July, August, and September. 62 residents completed the quiz. While overall performance was variable (average score 65%), participants performed extremely well on the two questions most pertinent to compliance with New York State law. 100% of respondents identified those born between 1945-1965 as a population to screen, and 98% identified HCV Antibody (Ab) as the initial screening test of choice. Despite widespread provider knowledge of the need to screen this population, the screening rate in October only increased to 23.5%. Subsequent HCV screening rates have been 16.7% and 18.3% in November and December, respectively. Educational modules were distributed in December and January; only 28 residents have completed the educational module thus far. Post-intervention analysis is pending further completion of the self-study modules.

Conclusion: While nearly all providers know to screen patients born between 1945 and 1965 for HCV, monthly screening rates remain below 25% at an urban academic primary care clinic. Factors cited as barriers included lack of time for discussion about screening, the large number of issues to be addressed, and 'alert fatigue'. The best educational modality to inform trainees about changes in guidelines remains unknown. We hope this study will demonstrate which educational style is more likely to translate to clinic practice.
ASSESSMENT
(UME)

ABSTRACTS 4 – 6
ABSTRACT 4

Evaluating an Online Training to Promote Standardized Medical Student Feedback on Reflective Writing

Authors: Jacquelin Rankine BA, Jocelyn Jiao MS, Lauren Feld BA, Hannah Oakland BA, Salina Bakshi BA, Jillian Nickerson BA, Yasmin Meah MD, Allison Gault MD

Purpose: A growing body of research supports the use of reflection in all levels of medical education. Faculty feedback on reflective writing is an important tool to improve reflective capacity in medical students. However, incorporating faculty feedback into a critical reflection curriculum may prove challenging due to limited faculty time and resources. Upper-level medical students may represent an untapped resource for guiding the development of reflective capacity in their peers. This study will provide an analysis of a novel, online training designed to teach upper-level medical students to evaluate reflective writing and provide feedback aimed to improve reflective capacity.

Methods: Participants are 12 fourth-year medical students at Icahn School of Medicine. Participants completed an online, self-administered training aimed to improve their ability to provide feedback on reflective writing. The training included a slide-set designed by the research team that participants navigated at their own pace. The training introduced participants to a definition of critical reflection, the components of critical reflection, and current research highlighting the importance of reflection. The training included a review of the LEaP framework, a set of structured literature-derived guidelines designed to improve critical reflection skill. The training also instructed participants on the REFLECT rubric, a validated rating scale for evaluating reflective writing. Finally, the training stressed the importance of feedback to improve reflective capacity, listed the components of good feedback, and introduced a structured method for providing feedback on reflective writing. To confirm adequate learning in the training, participants completed an online end-of-training assessment in which they evaluated a reflective writing sample using the REFLECT rubric and provided feedback.

Results: Analysis of participant performance during the end-of-training assessment was conducted. Possible scores on the REFLECT rubric range from 5 to 20 points, with 20 points indicating critical reflection. Participant ratings of the reflective writing sample were distributed with a median of 17 points (IQR = 16–18) indicating minimal dispersion. Participant feedback samples were manually coded by two independent researchers and emergent themes were recorded. 92% of participant feedback included suggestions to improve reflective skill (11/12). 83% included advice to improve patient care (10/12). 83% included encouragement about what elements of reflection were done well (10/12). 58% included advice for setting a measurable goal (7/12). 33% included advice to promote student self-care (4/12). Importantly, 92% of participants included feedback on both content and reflective skill (11/12), a technique associated with gains in reflective capacity in prior studies.

Conclusion: These findings suggest that medical students are able to reliably evaluate reflective writing and provide high-quality feedback following exposure to a novel training exercise. This training may serve as an easily replicable model to teach upper-level medical students to provide feedback on reflective writing and enhance the reflective capacity of their peers.
ABSTRACT 5

Assessing Medical Student Preparedness for an Era of Personalized Medicine

Authors: Caroline Eden BA, Noura S. Abul-Husn MD

Purpose: The development of methods to integrate genomics into clinical care has the potential to change the way medicine is practiced. With the recent presidential announcement of a 'Precision Medicine Initiative', an era of personalized medicine is on the horizon. The Icahn School of Medicine at Mount Sinai (ISMMS) is at the cutting edge of personalized medicine, with several initiatives in place including a pharmacogenomics pilot program for genome-guided prescribing in primary care. For this reason, ISMMS is poised to be a model environment in educating future physicians on how to effectively and confidently utilize genomics in clinical practice. However, at this time it is unclear whether the next generation of physicians will be able to keep pace with this rapidly evolving field. Objective: We sought to address this by developing questionnaires to assess ISMMS medical students' attitudes and perceived preparedness for personalized medicine.

Methods: Paper surveys were distributed to 520 ISMMS medical students, of which 212 were completed and returned (52% male, 47% female). We used quantitative analysis to interpret student attitudes toward genome-guided prescribing, feelings about their educational preparedness, knowledge of genomic testing technologies, and ability to understand genomic test results. Additionally, we collected data on whether students were interested in a career in research or were enrolled in a dual degree program, in order to understand factors that may contribute to varying attitudes toward personalized medicine.

Results: The majority of students (60.3%) agreed that they would be willing to use a patient’s genetic information to guide clinical decisions. When comparing students entering the first year (pre-didactic) to students in the second year (pre-clinical) and students in years 3 and 4 (clinical), we found that students who were further along in their education felt more comfortable in their factual knowledge about genetic variation predisposing to common diseases (p<0.001). However, there was no statistical difference among years in the students’ comfort levels in making treatment recommendations based on genomic test results (p=0.848). Only 7.3% of medical students in the clinical years agreed that their medical education had adequately prepared them to practice personalized medicine. Interestingly, a greater percentage of students who envision a career involving research agreed that it is important to learn about personalized medicine, when compared to students who did not want to pursue research or were undecided (85.2% vs. 72.6%, p<0.05).

Conclusion: Overall, the majority of ISMMS medical students support the integration of genomics into clinical practice. However, these data suggest a need for increased attention to applied, clinical genomics in the pre-clinical and clinical curricula in order to prepare students for the use of personalized medicine, which is likely to permeate all medical specialties in the near future.
ABSTRACT 6

Does the Extent of Medical Student Reflection Correlate with their Grade in an Emergency Medicine Clerkship?

Authors: Amy Leuthauser MD MS, Michael Chary PhD, Kevin Hu MD, Braden Hexom MD

Purpose: Many medical schools have begun to incorporate self-reflection exercises into their curricula. It is thought that these exercises help build a deeper understanding of material and lead to better academic performance. Students in clerkships often reflect upon their performance, but it is unclear if the exercise leads to better academic performance. The goal of this study was to evaluate the reflection of students in a one month Emergency Medicine (EM) clerkship to determine if there was a correlation between the degree of reflection and their final grade.

Methods: We conducted a retrospective case series analyzing the performance and reflective statements of 116 students who participated in an EM clerkship at two clinical sites from 2013-14. After each shift, an attending EM physician evaluated the student who could then complete an optional reflection section, which was free text. We analyzed the correlation between the final grade, expressed in quartiles and the degree to which the student completed the reflection using the Freeman-Halton extension of Fisher’s exact test. A linguistic analysis was also performed to analyze the choice of words in the student’s reflection.

Results: Of the 145 possible records, 116 were included for analysis. The other 29 were excluded as they were visiting students. Two EM physicians graded the rate of completion of the self-reflection, demonstrating moderate agreement in their assessment (Cohen’s kappa = 0.55). The assessments of both raters were significantly correlated with final grade. (p=0.006 and p=0.008.) A linguistic analysis showed that the students with the lowest grades in the course wrote the least amount of reflection.

Conclusion: There is a correlation between the degree and quality of reflection with final grade in an EM clerkship. In the future, as faculty perform the evaluations, they can encourage more insightful reflection from the students to improve their performance in the clerkship.
CURRICULUM (UME)

ABSTRACTS 7 – 11
ABSTRACT 7

MedDOCs: Increasing Student Retention in Youth Education Programs

Authors: Matthew Anderson BS, Brian Cohen BA, James Connolly BA, Efe Ghanney BA, Yiting Chen BA, Anna Liang BS, Nicholas Titelbaum BS, Stephen Trinidad BS, Hooman Poor, MD, Ann-Gel Palermo DrPH, MPH

Purpose: MedDOCs (Medical Discovery of Careers), an afterschool program run by students at the Icahn School of Medicine at Mount Sinai (ISMMS), aims to expose high school students from groups underrepresented in medicine to a medical school environment. Historically there has been a single curriculum focused on the cardiovascular system for the fall and spring, which precluded students from attending both semesters and caused a drop in attendance (from 108 students in fall 2013 to 89 in spring 2014). The observed falloff in the spring also led to a lack of applications to summer programs through the Center for Excellence in Youth Education (CEYE) at ISMMS. In the summer of 2014, only nine MedDOCs students applied to CEYE summer programs, of whom five were accepted. We sought to increase the retention rate of high school students in CEYE programs by expanding MedDOCs to two semesters with the addition of a new curriculum.

Methods: For the spring 2015, session we implemented a new curriculum centered around pulmonology, with an emphasis on asthma and the effects of smoking. Each class is taught by two first-year medical students and averages twelve high school students. Data from the MedDOCs application and the program’s quality assurance survey administered at the beginning of each semester were assessed in order to identify past student participation and to define student demographics.

Results: MedDOCs received 305 applications for the spring 2015 semester, sent out 250 acceptances, and enrolled 184 students for a matriculation rate of 73.6%. 57 of the 155 students who participated in the fall 2014 semester re-enrolled for the spring 2015 semester (a retention rate of 36.8%). In addition, 39 students who participated in MedDOCs prior to fall 2014 reapplied for the spring 2015 semester. 171 students completed the survey on the first day of the spring 2015 semester with the following breakdown by gender: 69.6% female and 30.4% male. For ethnicity, the student population self-identified as 39.8% “Asian”, 31.6% “Hispanic”, 19.3% “Black”, 4.1% “White”, and 5.3% “Other”. 59.2% of students spoke a non-English language as their primary language at home. When asked to describe the highest level of education attained by their parents, 60.1% and 47.8% of students reported high school diploma or less for their mothers and fathers respectively. Of the 34 schools represented, 50.9% of the students heralded from a high school in East Harlem.

Conclusion: With the implementation of our new pulmonary curriculum, we were able to retain 36.8% of students within ISMMS youth education programs. Future research will assess how the expansion of the MedDOCs program affects the proportion of MedDOCs students that apply to CEYE summer programs.
ABSTRACT 8

Preseason Pediatrics: Outcomes from Year One of a Preclinical Curriculum for Medical Students

Authors: Benjamin Laitman MS, Scott Moerdler MD, Suzanne Friedman MD, Blair Hammond MD, Alefiyah Malbari MD, Kathleen Gibbs MD

Purpose: Medical students have limited preclinical exposure to pediatrics. We performed a needs assessment of graduating medical students at our institution. They reported decreased knowledge, interest and preparedness for the clerkship when starting their clinical years compared to other fields of medicine. In order to increase preclinical opportunities, we created an optional experience, 'Preseason Pediatrics' (PSP), focusing on pediatric-specific knowledge and clinical skills.

Methods: Students were assigned resident mentors at the start of the program. The curriculum consisted of monthly didactic sessions developed and taught by residents. These were followed by resident mentored hands on clinical experiences directly related to the topic of the month, where students applied knowledge and skills learned. Topics were designed to correspond with courses being taught in the medical school curriculum at that time, including newborn physical exam, developmental milestones, cardiac exam, common infectious diseases and ending with a resident career panel. The students who participated completed a questionnaire to assess clinical knowledge as well as attitudes and perceptions towards pediatrics before and after the program. At completion students also rated their residents as mentors and teachers.

Results: 60 students (40% of the MS1 class) participated in the pilot program, 50 completed the pre and 43 completed the post assessments. Percent correct scores on a pediatric knowledge assessment increased from 37% to 63% (p<0.05) and 83% reported feeling more prepared for their pediatric clerkship. 97% of the students rated their mentors as a good or above average educators and 90% reported that their learning was comparable or better to faculty teachers. Overall, 95% of students would recommend the PSP experience to other students.

Conclusion: PSP is a novel preclinical program introducing medical students to pediatrics. The combination of didactics paired with clinical experiences improved knowledge of pediatrics and perception of preparedness for their clerkship. The role of residents as educators and mentors expands the available resources for students to identify mentors and develop their pediatric skills. Based on feedback we restructured the sessions for the upcoming year to incorporate additional relevant topics including pediatric rashes and nutrition. We are also expanding the curriculum to include a subsequent year, focused on skills utilized in the pediatric clerkship and beyond.
Innovations in Undergraduate Medical Education: A Novel Elective for Third Year Medical Students, Emergency Critical Care

Author: Amy Leuthauser MD, MS

Purpose: Until now, there have been no third year medical student EM electives at our institution. There were a number of students that wanted to explore EM, and so the need for this elective to fill that void became obvious. The educational objectives: To expose the learner to the ED in a way that was unique and different from the required clerkship, giving the student and exposure to emergency critical care and comfort with the ED prior to their required clerkship.

Methods: The elective is entitled "Emergency Critical Care" and has a two week designed curriculum, which has a unique offering for the learner in that they divide their time in the resuscitation area of the ED, and follow their patients through their hospital course in the intensive care units. The students round with the ICU teams and gain a unique perspective on the patients disease processes and can better understand the critical interventions performed in the ED and how that translates to outcomes for those patients. They also benefit from direct teaching from the ED attendings and critical care resident on their clinical shifts, as well as a didactic curriculum focused on the critically ill patients, which includes a critical care textbook, an introduction and debrief with the course director. The learner is required to write a case report on a memorable patient with the goal of presenting it at their medical school student research day.

Results: At this time, two students have completed the elective, and their feedback was exceedingly positive, and they have both made their application to EM residency. Two more students have signed up for the elective for this semester.

Conclusion: At present this elective is offered at two of our health systems locations, and as a future direction we hope to expand to all the campuses, offering the learners unique clinical experiences. We feel that this elective would be an important addition to other institutions and offers the learner an experience that is unique and different from a tradition EM rotation.
Health Literacy in Transitions of Care: An Innovative Curriculum and Objective Structured Clinical Examination for Fourth Year Medical Students

Authors: Ariana Witkin BA, Dana Casey BA, Lianna Lipton BS, Peter Gliatto MD, Reena Karani MD

Purpose: More than one-third of Americans have low health literacy. Low health literacy is associated with multiple adverse health outcomes, especially at times of transitions such as hospital discharge. Although low health literacy is prevalent and a significant risk factor for morbidity, mortality, and high health care costs, health professionals are often not trained to communicate with this potentially vulnerable patient population. Skill-based curricula and competency-based assessments may address this critical need.

Methods: Using Kern’s principles of curriculum design, we developed and implemented a curriculum on health literacy in transitions of care for fourth year medical students that focused on evaluating and communicating with patients with limited health literacy. The curriculum included an interactive skills-based workshop with opportunities for active learning including reflection, practice, feedback and role-play. We then created an OSCE station (Kirkpatrick level 3) to assess participants’ ability to communicate with a patient scheduled for hospital discharge. Based on clerkship scheduling, half of students completed the workshop followed by the OSCE, while the rest completed the OSCE first, providing a comparison group for the study. Actors were trained to standardize case portrayal and calibrate ratings. The 30-minute OSCE station required learners to counsel the patient on taking an oral anticoagulant and then complete written discharge instructions for the patient. Standardized patients completed a behaviorally anchored 17-item checklist assessing student performance. Validated instruments including Flesch-Kincaid readability tool, Simple Measure of Gobbledygook, and Gunning Fog were used to assess the reading level of students’ written discharge instructions. The study was deemed exempt by the Icahn School of Medicine Institutional Review Board.

Results: One hundred and one out of 131 fourth-year medical students completed the study in 2014; the rest were absent from the clerkship due to illness or residency interviews. 57 (56%) students received the workshop first, and 44 (44%) received the workshop after the OSCE. Participants scored on average 14.4/17 on their checklist and had average readability scores at the 10th grade reading level (range 7th to 16th) on their written instructions. Students who received the workshop prior to the OSCE outperformed their peers on the checklist (15.1 vs. 13.4, p<0.0001) and on the grade reading level of their written instructions (9.9 vs. 10.6, p = 0.01). The checklist performance relationship remained statistically significant after controlling for an intended career in primary care versus non-primary care specialty (p<0.0001).

Conclusion: We created and implemented an innovative curriculum and skills-based assessment in health literacy for medical students. Students who received the curriculum demonstrated key skills more frequently than those who received the curriculum following the assessment as measured by OSCE station scores. Future efforts will focus on assessing skill retention over time as well as assessing skills used with actual patients.
Continued Development of the Role of Teaching Assistants in Mount Sinai’s ‘Structures’ Course

Authors: Patrick Maffucci BA, Benjamin Laitman MS, Jeffrey Laitman PhD

Purpose: The Structures course at Mount Sinai is a combination of three courses taken by first year medical students: Gross Anatomy, Histology, and Embryology. Functioning as a single unit, this course allows integration of these three areas to enhance student learning and offer a unique perspective for medical students. Last year, we reported our efforts to reshape how Teaching Assistants function within our course.

Methods: This year, with the second iteration of Structures and as part of a continued effort to increase the involvement of student Teaching Assistants in the course, Teaching Assistants became responsible for a broader range of activities. Notably, table conferences, a substitute for traditional practical exams in Gross Anatomy that have normally been conducted by faculty members, were transitioned entirely to Senior Teaching Assistants (4th year medical students, scholarly year medical students, or PhD phase MD/PhD students). In addition, second year medical student Teaching Assistants became responsible for organizing and teaching a number of review sessions, which included weekly review sessions, midterm and final examination reviews, and in-lab review sessions before each table conference.

Results: Course evaluations have been completed and are still being analyzed. However, feedback on TAs and their role in the course was overwhelmingly positive. In addition, focus groups consisting of first year students are being organized to solicit feedback and suggestions. Of equal importance, Teaching Assistants have responded favorably to their increased involvement in the course and have cited the value of increased opportunities to teach and of strengthening their understanding of topics taught in the course.

Conclusion: Overall, we have found that changes to our Structures course that increased the role and responsibilities of Teaching Assistants in medical education have been extremely positive for both students and Teaching Assistants alike.
ABSTRACT 12

A Model for Integrating the Assessment and Management of Geriatric Syndromes into Internal Medicine Continuity Practice: 5 Year Report

Authors: Christine Chang MD, Eileen Callahan MD, William Hung MD, David Thomas MD, Rosanne Leipzig MD, Linda DeCherrie MD

Purpose: National surveys indicate a need for training in geriatrics during internal medicine (IM) residencies. A Mount Sinai survey confirmed that selected ambulatory geriatric subjects were important for internists to learn but were not adequately or comfortably taught by faculty. A geriatric ambulatory curriculum on dementia, falls and urinary incontinence was developed to improve IM residents care of patients with these syndromes. This curriculum was well received by IM residents, with improved perceived knowledge, and enhanced evaluation and management skills of common syndromes. IM residencies may consider embedding this geriatric curriculum model into pre-existing IM continuity clinics as a block rotation to meet ACGME requirements and to encourage residents to develop expertise in managing common geriatric syndromes.

Methods: From December 2005 to 2010, second year residents met for a 3 hour session weekly for four consecutive weeks with faculty geriatricians for a curriculum focused on dementia, falls and urinary incontinence. After a one-hour case-based didactic session, residents applied learned content and concepts to patient consultations. Consultations were precepted by geriatric faculty and shared with the team. Program Evaluation: Prospective pre-post questionnaires measured 1) self-perceived efficacy in evaluating dementia, falls and urinary incontinence, 2) knowledge about familiarity, ability to administer, interpret and intervene on results of geriatric assessment tools, and 3) knowledge about diagnosis and management of dementia, falls and urinary incontinence. The course was assessed using a 4-point Likert Scale (4=Excellent, 3=Good, 2=Fair 1=Poor). Resident incorporation of skills taught was evaluated by measuring numbers of diagnoses, medications, consults for these 3 syndromes made on geriatric patients seen 6 months before and after the curriculum.

Results: 188 residents completed the curriculum. Although 87.9% planned to subspecialize, 96.2% felt it was moderately or very important to learn ambulatory geriatric medicine. Pre-curriculum, 98.9% felt either not well prepared or only somewhat prepared to manage geriatric patients. After completing our curriculum, residents reported acquired knowledge and enhanced evaluation and management skills of these 3 syndromes, and were more likely to use all recommended screening tests in future practice. Course evaluations were favorable. Practice change was not evident in geriatric patients seen 6 months after the curriculum.

Conclusion: Embedding ambulatory geriatric curriculums such as this into pre-existing IM clinics may help IM residents’ ability to manage these 3 common geriatric syndromes.
ABSTRACT 13

Bringing Medical Education Home: The Pediatric Visiting Doctors Curriculum

Authors: Hannibal Person MD, Leora Mogilner MD, Elaine Lin MD, Joseph Truglio MD, MPH, Maureen Braun MD

Purpose: Despite the growing emphasis on pediatricians understanding the health needs of their patients within the context of their families and communities, few pediatric residency programs allow trainees to manage chronic disease and assess social health determinants (SHD) through home visits. The effectiveness of single home visits in improving residents' understanding of these SHD has been demonstrated. However, residency programs have yet to teach comprehensive chronic disease management within a patient's home. In order to understand whether this opportunity would benefit learners, an elective curriculum was created with The Pediatric Visiting Doctors Program (PVD), the first clinical program to provide comprehensive, multidisciplinary care for children through home visits. This curriculum was designed with the goal of improving learner confidence in assessing and addressing SHD, while also improving confidence delivering team-based healthcare to children with chronic illness.

Methods: Two and four week curricula for medical students and residents were developed. Educational methods included brief didactic sessions with PVD team members, attending home visits, conducting patient interviews, performing physical exams, and administering vaccines. Learners were required to perform a home safety assessment and present an evidenced-based plan for intervention. They were further required to produce a scholarly project based on a topic of interest encountered during the home visits. At the end of the elective, learners completed an anonymous and retrospective survey to capture how their confidence had changed performing home visits, assessing SHD, designing evidence-based interventions, medically managing patients with complex chronic illness, and working within a healthcare team.

Results: Since July, 2014, five, fourth-year medical students have participated in the elective, with one resident and three additional medical students registered for future participation. Preliminary data shows that by the end of the elective, 75% of participants indicated increased confidence visiting patients in their homes. Additionally, all respondents reported increased confidence asking families about their home situation, and 75% reported increased confidence suggesting interventions. All respondents reported they “agree” or “strongly agree” that they would be more likely to ask patients about their home environments and discuss how this could impact their health. Also, 75% of participants indicated they felt more confident managing patients with asthma, infants with prematurity, and the medical equipment and subspecialty referral needs of children with complex illness.

Conclusion: Preliminary analysis suggests that the PVD curriculum provides learners with increased confidence assessing home environments and counseling families. It further suggests increased confidence managing children with chronic illness. Along with continuing this data collection from medical students and residents, future research will include surveys of families to better understand how home visitation shapes their relationship with the healthcare team and impacts health outcomes.
Residency Enhancement through Adult Learning in Neurology (REAL Neurology)

**Authors:** Hazem Shoirah MD, Achillefs Ntranos MD, Stephen Krieger MD

**Purpose:** There is insufficient research about the feasibility and efficacy of implementation of principles of Adult-Learning Theory (ALT) in post-graduate medical education in neurology. REAL Neurology is a curricular reform project that implements ALT principles and re-calibrates the focus of the educational process towards learners. The Neurology curriculum was refined in a clear, goal-oriented format and divided into 4 courses with objectives matching the level of academic progression through the year. The structure of each session was redesigned and divided from a single 60-minute session into a 40 minute lecture followed by a 20 minute case-based questions and discussions, led by rotating teaching residents. New resident-led reports were introduced that facilitated and promoted self-learning and teaching skills. Engagement and participation was ensured through implementation of modern communication and educational technologies including video-conferencing, live audience response systems and creation of a comprehensive media archive.

**Methods:** The Residency In-Service Training Exam (RITE) is a self-assessment tool developed by the American Academy of Neurology to evaluate overall knowledge of neurology and neuroscience and identify areas of potential growth. The test is administered annually in late February. Scores are reported on a percentile basis comparing examinees with nationwide examinees in same level of training. To quantitatively measure efficacy of the ALT curriculum, mean change in year-to-year percentile ranking per PGY class will be derived from historical controls over five years prior to implementation of curricular reform, and will be compared to mean change in percentile after program implementation, controlling for PGY level of training using ANOVA. For first-time takers, class percentile will be compared with class percentiles of first-time takers of the five years prior to implementation and will be controlled for the mean pre-residency USMLE score using ANCOVA. To qualitatively measure the consistency of the curricular reform, the learning residents will fill out surveys rating the reformed program’s fidelity to the principles of adult learning theory, as well as an assessment of learner-satisfaction.

**Results:** The curricular reform has been implemented since July 2014. Results of the first year of implementation will be reported upon completion of RITE in late February 2015. Ongoing quality will be monitored with periodic surveys of residents to ensure learner satisfaction and continued application of ALT principles.

**Conclusion:** Conclusions will be derived upon completion of data collection in late March 2015.
ABSTRACT 15

Can an ECG Elective be Developed that Meets the FAIR Principles?

Authors: Kaushal Shah MD, Felipe Teran Merino MD

Purpose: Learning to interpret ECGs is an important skill for medical students. Emergency Physicians are expert in clinical interpretation of ECGs and the emergency setting is an excellent environment to be exposed to a variety of complaints and medical conditions that require ECG interpretation. The challenge is to develop an elective rotation that encompasses all the 'FAIR' Principles of effective learning described by Harden and Laidlaw: Feedback, Active Learning, Individualized, and Relevant. Educational Objectives: To create a successful clinical ECG elective that meets the 'FAIR' principles.

Methods: Medical students are taught to interpret ECGs over a 2 week course through the following methods: (1) 10 mini-lectures (30min-1hour in duration) on ST Elevation, Bradycardia, ST Elevation Mimics, Syncope, Extracardiac Manifestation of ECGs, Toxicology & Electrolytes, Wide Complex Tachycardias, Tachydysrhythmias, AVR, and Pediatric ECGs; (2) “ECG Shifts” where students spend 4 hours reviewing all ECGs performed at triage and present the clinical history and ECG interpretation to an emergency physician; (3) observation in the Cardiac Catherization Lab; (4) participate in two Cardiology ECG Noon Conferences designed for cardiology fellows; (5) self-study. Mini-lectures are given by emergency physicians, pediatric emergency fellows and emergency medicine residents. The course is offered six times per year with a maximum of 6-8 students in each session.

Results: Over the course of one year, 40 medical students completed the Clinical ECG Interpretation Course and gave the following average ratings on a scale of 1-5: Feedback 4.30, Active Learning 4.90, Individualized 4.65 and Relevant 4.98. The elective is highly coveted. The course has been 100% filled with at least one person on the waitlist for each session at all times.

Conclusion: We have developed a popular and effective ECG elective which follows the “FAIR” Principles of effective learning described by Harden and Laidlaw, completely by emergency physicians.
Effectiveness of 'Pimping' as a Teaching Method in the Emergency Department

**Authors:** Felipe Teran Merino MD, Sumintra Wood MD, Suzanne Bentley MD, Reuben Strayer MD, Daniel Lakoff MD, Kaushal Shah MD

**Purpose:** Medical 'Pimping', the situation when a superior asks a trainee specific knowledge during clinical practice usually in front of peers, is a well-recognized teaching practice in medicine. While the stress and anxiety this method generates is widely recognized, there are no studies assessing the effectiveness of this practice. Our objective is determine the effectiveness of pimping among emergency medicine (EM) residents compared to a non-stress provoking method during bedside teaching in the emergency department.

**Methods:** Prospective, randomized-controlled study performed during shifts. Groups of 3-4 residents, receive a bedside teaching session on head trauma; either through a stress-provoking pimping method (intervention) or supportive, non-stress provoking method (control). Both groups are ran by one of five EM Faculty trained with a brief online module. Faculty asks the same pre-defined set of 8 questions on head trauma. After each session, residents complete a questionnaire on their perception of the teaching method and 1 month later, a written test on the same topic to assess their retention.

**Results:** Ten residents have participated in the study; 7 in the intervention arm, 3 in control arm. Only survey data regarding perceptions has been collected. Two residents in the control group felt “not pimped at all” and 1 felt “somewhat” pimped; compared to the intervention arm where residents felt either “definitely” (3/7) or “mostly” pimped (3/7). Among all resident’s, the perception regarding effectiveness of pimping as a teaching method, 2 “rarely”, 4 “sometimes” and 2 “mostly”. Regarding their experiences with pimping in medical school compared to residency, 7 residents felt either a little or way less “pimped” during residency.

**Conclusion:** Our preliminary data is consistent with previous survey data reporting great variation on student’s perception of pimping.
ABSTRACT 18

Teaching Geriatric Concepts in Internal Medicine (IM) Residency Continuity Practice does not Impact Clinical Practice

Authors: Christine Chang MD, Eileen Callahan MD, William Hung MD, David Thomas MD, Rosanne Leipzig MD, Linda DeCherrie MD

Purpose: A geriatric ambulatory curriculum on dementia, falls and urinary incontinence (UI) was developed to improve IM residents care of patients with these syndromes. Though IM residents reported acquired knowledge and enhanced evaluation and management skills of these 3 syndromes after the curriculum, the clinical practice outcomes are unknown. A chart review was conducted to assess for evidence of ‘practice change' in geriatric patients seen by IM residents who completed the curriculum.

Methods: A retrospective chart reviews were performed to assess for incorporation of concepts and skills taught. Reviews recorded evidence of residents’ 1) ability to diagnose these 3 geriatric syndromes, 2) use of the recommended evaluation tools taught and 3) ability to initiate appropriate treatment for these diagnoses for geriatric patients seen by residents 6 month prior and 6 month after this ambulatory geriatric curriculum. To ensure that the EHR-generated chart review for the 5 year resident cohort was accurate, a manual, validating chart review for presence of documentation for UI was performed on 10% of geriatric patients seen by the 2009-2010 IM residents cohort.

Results: From December 2005 to 2010, 188 second year IM residents completed the curriculum. Less diagnoses, screens and management decisions were made in geriatric patients seen 6 months after the curriculum. Fewer dementia (pre 0.17 vs post 0.15, p=0.03) and UI (pre 0.20 vs post 0.16, p=0002) diagnoses were made, less dementia screens were performed (pre 0.04 vs post 0.01, p<0.001), and fewer treatments for dementia (pre 0.08 vs post 0.07, p=0.07), falls (pre 0.55 vs post 0.22, p<0.001) and UI (pre 0.20 vs post 0.16, p<0.001) were ordered. Confirmatory manual chart review failed to detect a change in resident documentation for UI.

Conclusion: Although this ambulatory geriatric curriculum was well received by IM residents, concepts taught may not improve clinical practice of these 3 syndromes for older patients. Future work to overcome barriers to clinical implementation of their knowledge should be undertaken.
PROFESSIONAL DEVELOPMENT

ABSTRACTS 19 – 38
ABSTRACT 19

Mentorship and Longitudinal Integrated Clerkships: A Pilot Study

Authors: Allison Gault MD, Robert Fallar PhD, Cinthia Delarosa MPH, Yasmin Meah MD, David Thomas MD

Purpose: Traditional medical education places 3rd and 4th year students in discipline-specific blocks with limited longitudinal contact with faculty members. In contrast, longitudinal integrated clerkships (LICs) provide an innovative model in which 3rd year students are paired 1:1 with faculty throughout the academic year, cementing a robust mentoring relationship. It is unclear whether LIC students perceive improved mentorship experiences when compared to students on traditional tracks (TT). The goal of this study is to compare mentorship experiences in one medical school between LIC students and TT students.

Methods: A 65 item Likert-scale survey was designed based on mentorship themes identified in the literature and pilot tested prior to its administration. The survey was sent electronically to a total of 297 students from 2 consecutive 4th year medical student classes at the Icahn School of Medicine at Mount Sinai (ISMMS) during July-September 2013 and July-September 2014. Survey responses were analyzed using Fisher's exact test.

Results: The overall response rate was 27% with 83 students responding to the survey. Respondents were 36% male and 64% female. Of those who responded, 70 identified a mentor during medical school. A total of 7 MD PhD students completed the survey and were removed from data analysis. Within the LIC cohort, 18 responded and 12 reported their mentor came from the clerkship. These 12 LIC surveys were compared to 49 TT responses. Of the 12 LIC students, 92% strongly agreed, compared to 49% of TT students, that their mentor motivated them to improve their work (p=0.009). LIC students were more likely to strongly agree that their mentors stimulated them to think critically (p=0.02) and increased their self-confidence (p=0.012). Additionally, 91% of LIC students strongly agreed that their mentors were important for their personal growth (p=0.02). There was no significant difference between LIC and TT students in behaviors of mentors related to career development and professional growth.

Conclusion: In this pilot study, LIC students reported enhanced mentoring relationships as compared to their TT colleagues within certain mentoring domains. As LIC clerkships tend to involve a smaller number of students, the sample size of this LIC is a potential limitation to the study. Qualitative studies and studies which include larger numbers of LIC students across multiple institutions would better elucidate mentorship experiences in this unique type of clerkship.
ABSTRACT 20

Making the Match: Characteristics of Successful Applicants to the Urology Match

Authors: Fatima Husain MD, Steve Weissbart MD, Jeffrey Stock MD

Purpose: No study to date has identified the applicant characteristics that are associated with successfully matching into urology, and ultimately becoming a urologist. As matching into urology residency is the gateway to becoming an urologist, an appraisal of how the next generations of urologists are being chosen is warranted. To this end, we compared the characteristics of urology residency applicants who matched to who did not match.

Methods: After obtaining IRB approval, we conducted a retrospective review of the applications of the 291 candidates who applied to Mount Sinai School of Medicine’s Urology residency program for the 2014 match. This represented 65% of the total applicants for the 2014 Urology match. Queried application parameters included: USMLE scores, Alpha Omega Alpha status, research presentations/publications, medical school, gender, and minority status. The primary outcome, successfully matching into a urology residency position, was determined for each of the 291 applicants by matching the AUA identification number on the candidate’s application to the AUA 2014 Urology Match List. Nonparametric tests were used to compare the two groups and a logit model was created to assess the relationship between matching with USMLE Step 1 and Step 2 scores.

Results: Applicants who matched had a higher median USMLE step 1 score (243 versus 234, p=.001) as well as a higher median USMLE step 2 score (250 versus 235, p= 0.005). There was no difference in median age between the groups (26 versus 26, p=0.141). Gender did not influence matching success (p=0.701). 95% of applicants who matched had a publication compared to 88% who did not match (p=0.031). 98% of applicants who matched had volunteer experience compared to 91% who did not match (p=0.019). 88% of applicants who matched reported work experience compared to 80% who did not match (p=0.063). The odds of matching were increased with a higher USMLE step 1 score (odds ratio 1.04, 95% CI 1.02-1.06, p<0.001) and a higher USMLE step 2 score (odds ratio 1.04, 95% CI 1.02-1.07, p<0.001).

Conclusion: Applicants who matched into urology only had slightly better qualifications than those who did not match. Further research is needed to assess whether these credentials are predictive of performance as a resident, and ultimately a practicing urologist.
ABSTRACT 21

What's the Big Deal with Mentoring? An Analysis of Residents' Attitudes and Perceptions of Mentoring

Authors: Christine SanGiovanni MD, Elizabeth Berg MD, Kathleen Gibbs MD

Purpose: Effective mentoring is felt to be essential in academic medicine; however, formal training to develop mentoring skills is uncommon during an academic career. Most pediatric residency programs have a mentoring program in place, yet limited outcome data exist. The ACGME expects residents to receive training in teaching but not mentoring. Yet residents often serve as informal mentors to medical students by acting as role models during clinical teaching which is related to mentoring more than teaching. No formal curricula to develop resident skills as a mentor or mentee exist. Thus, a needs assessment was performed to analyze residents' experience and attitudes as a mentor or mentee in order to develop a mentoring curriculum for pediatric residents.

Methods: Pediatric residents of all training years were asked to complete an anonymous electronic survey. They were asked about their experience with mentoring, perception of themselves as a mentor, and their approach to developing mentorships as well as perceived barriers to creating successful mentorships. Differences between interns and senior residents were analyzed by chi square (p<0.05 was significant.)

Results: The needs assessment was completed by 24 residents (40% response rate, 14 interns and 10 residents). 48% had specifically identified having a career mentor, yet 87% agreed that a career mentor was necessary during residency. Important factors when choosing a mentor were: approachability, work/life balance, and sub-specialty of a faculty member. Common barriers to developing mentorship were availability of time (resident or faculty member) and approachability of faculty member. Only 20% of residents currently view themselves a mentor (p = 0.3 between groups), yet 82% agreed that they could become a mentor if they received training (p>0.05 for both groups).

Conclusion: Mentoring is considered essential for career development, yet no published curricula to develop skills exist. Residents often serve as mentors during clinical teaching but few residents recognize they play this role. This needs assessment has served to inform creation of a curriculum to foster skills in a resident as mentor and mentee including: developing a successful mentorship, active role modeling, and conflict resolution. In addition, a database of faculty mentors was structured based upon characteristics residents state they seek in a mentor, and a peer mentoring program was also developed to provide a structured opportunity to utilize learned skills with the new curriculum. Evaluation of the curriculum and database will include feedback from residents in the form of evaluations as well as any changes noted in residents’ surveys pre and post implementation of curriculum.
Surgical Representation on Medical School Faculty Development Committees

Authors: Rami Sherif BA, Michael Leitman MD, Peter Taub MD

Purpose: Medical schools are devoting increased resources to supporting their faculty and assisting with promotion. Several schools have created specialized 'faculty development committees' (FDCs) to foster this goal. The FDC’s charge is to develop a support system for faculty by providing advice to standing faculty members, coordinating seminars to assist in career development, and reporting to the deans any faculty issues. As medical school faculties are comprised of medical, surgical, and lay members, it is important to have diverse representation on such a committee. The aim of the present study is to determine the level of involvement of surgeons on FDCs in American medical schools.

Methods: A list of M.D. granting institutions in the United States was obtained from the U.S. News and World Report yearly Education Rankings. For each of the 141 accredited M.D. programs in the United States, a Google search was performed using the name of the medical school combined with the following terms: “faculty development,” “faculty development committee,” and “development committee.” After lists of committees were found, each member was looked up and determined to be a surgeon, a medical doctor, or neither.

Results: Standing FDCs were noted in 19 medical schools. The committees have between seven and 31 active members with an average of 19.3 members. On average, surgeons represent 5.6% of FDC members. Seven out of the 19 committees have no surgical faculty representatives. Of the 12 committees that do have surgical faculty, surgeons still only represent 8.3% of the committees on average, and seven of the committees have only one surgical faculty member. On the other hand, 18 out of the 19 committees have at least one lay member. On average, lay members make up 42.5% of the committees with the highest lay representation on a single committee being 79%. Only one FDC has exclusively medically trained members.

Conclusion: Having an FDC is important for the maintenance of a successful, productive, and content faculty. It is crucial for such committees to have representation from all aspects of the medical school. Our analysis shows that while medical and lay departments have a strong presence on such committees, there is a lack of surgical input. The American Association of Medical Colleges reported in 2013 that surgeons make up 12.1% of medical faculty. Clearly, surgeons are significantly underrepresented on FDCs given the proportion of faculty that they make up. Lay faculty make up nearly half of FDCs despite only being 13.4% of total faculty. While input from non-surgical faculty is crucial, this should not be at the expense of surgical participation. Increasing the number of surgeons on FDCs would improve the strength and efficacy of such committees, allowing for holistic development of a cohesive medical school faculty.
ABSTRACT 23
2015 BLUE RIBBON WINNER

The Quantity of Faculty Evaluations Does Not Translate into the Perception of Quality Feedback for Residents

Authors: Joseph Blankush BA, Brijen Shah MD, Sophie Church BA, Gaber Badran BS, Paul Johnson MFA, Scott Barnett MD, Michael Leitman MD

Purpose: Feedback from faculty is an essential component of resident education and professional development. The ACGME survey asks about satisfaction with feedback after assignment, one form of which is the end-of-rotation evaluation, and the assumption often exists that more evaluations equates to better feedback. Recently, online tools have further enabled efficient, wide-scale evaluation and afford residents the opportunity to periodically review performance on their own. Questions remain, however, whether programs with more end-of-rotation faculty evaluations have higher resident satisfaction with feedback and whether residents consider this process to be formative and beneficial to their education. This study measures the correlation between the number of faculty evaluations per resident and residents’ perception of faculty feedback.

Methods: 147 ACGME-accredited programs within a consortium of 17 hospitals sponsored by a single, private medical school were included in the analysis. 87 programs (49 core residency programs and 38 advanced training programs) had 4 or more residents and thus received summary data from the ACGME resident survey. Resident ratings from 2013-2014 ACGME surveys pertaining to satisfaction with faculty feedback (“satisfied with feedback after assignment”) were analyzed against the number of faculty evaluations completed per resident during this time period using data from New Innovations (Uniontown, OH). R-squared correlation analysis was performed using Microsoft Excel (Microsoft, Redmond, WA).

Results: During this period, 177,096 evaluations were distributed across the 87 programs. 117,452 evaluations were completed (66%). On average, faculty submitted 57.5 evaluations per resident. Core residency programs had a greater number of average evaluations per resident than advanced training programs (62.9 vs. 25.3, respectively). The average score for the “satisfied with feedback after assignment” survey question was 4.2 (range 2.2–5.0, national mean 3.9). The overall correlation between the number of evaluations per resident and the residents’ perception of feedback was minimal and trended inversely (R2 = -0.00557). The correlation varied minimally between medical (R2 = -0.03445), surgical (R2 = -0.05541) and hospital-based (R2 = +0.1511) programs. Advanced training programs had a positive but minimal correlation (R2 = +0.08413), while core residency programs had a negative correlation (R2 = -0.04783). Larger programs were slightly more likely to have more evaluations per resident (R2 = +0.25906), but there was no correlation between the number of residents in a program and resident satisfaction with feedback (R2 = -0.00557).

Conclusion: Resident perception of feedback after assignment is not correlated with quantity of end-of-rotation evaluations. An emphasis on post-assignment evaluation by faculty is an important part of resident education but misses the mark as a replacement for on-going, data-driven, structured feedback according to residents’ perceptions. Further study and program improvements should focus on capturing other forms of feedback into residency management systems so resulting data can be used by clinical competency committees.
ABSTRACT 24

Mindfulness for Hospitalists: A Pilot Study Investigating the Effect of a Mindfulness Initiative on Mindfulness and Perceived Stress among Hospitalists

Authors: Sumedha Chablani BA, Vinh-tung Nguyen MD, Dennis Chang MD

Purpose: Stress and burnout are pervasive among health care professionals. Furthermore, both have been associated with health problems, including depression and diabetes, as well as poorer quality of patient care. Although there are limited self-care initiatives in clinical settings, mindfulness practice has been shown to promote physical and mental well-being in health care professionals. The purpose of this pilot study is to investigate the effect of a mindfulness initiative on mindfulness and perceived stress among hospitalists at Mount Sinai Hospital, and to determine how to better promote self-care among hospitalists.

Methods: After a grand rounds presentation on mindfulness, hospitalists voluntarily signed up for an hour-long weekly mindfulness session at Mount Sinai Hospital over the course of 5 weeks. Mindfulness sessions were led by a trained mindfulness instructor and were open to hospital staff and patients. Each participant completed two validated questionnaires prior to the intervention and after the intervention to assess their pre- and post-intervention levels of mindfulness and perceived stress: the Mindfulness Attention and Awareness Scale (MAAS) and the Perceived Stress Scale (PSS), respectively. Higher scores on the MAAS reflect greater levels of dispositional mindfulness. Higher scores on the PSS reflect greater levels of perceived stress, and the mean PSS for adults age 30 to 44 is 13.0. A paired-samples t-test was conducted to evaluate the impact of the mindfulness initiative on hospitalists’ MAAS and PSS scores. Statistical calculations were performed using SPSS version 22.

Results: Of the 5 study participants, the mean age was 33.4 ± 3.4 years and 40.0% (N=2) were female. The average number of sessions attended by the hospitalists was 2.0 ± 1.7. There was an increase in MAAS scores from pre-intervention (M=3.56, SD=0.84) to post-intervention (M=4.16, SD=0.51, t(4)=-2.52, p=.07). There was a decrease in PSS scores from pre-intervention (M=20.40, SD=2.70) to post-intervention (M=15.00, SD=6.32, t(4)=2.16, p=0.10), and the post-intervention mean PSS score for participants was closer to the mean PSS score for adults age 30 to 44.

Conclusion: Hospitalists in this study have higher levels of perceived stress than the average population. Among hospitalists who attended an average of two mindfulness sessions over 5 weeks, there was a trend toward statistical significance for increased mindfulness and decreased perceived stress. These results suggest the potential need for and benefit from mindfulness practice among hospitalists. A limitation of this study is that the hospitalists had to work around their schedule to attend the weekly mindfulness session, which was sometimes difficult given their demands, and thereby limited attendance. Future studies will focus on ways to customize the mindfulness session for hospitalists in order to improve their participation in and benefit from this self-care initiative.
A Longitudinal Approach to Developing Educators in Medicine: The Pediatric Resident Teaching Group

Authors: Scott Moerdler MD, Suzanne Friedman MD, Benjamin Laitman MS, Alefiyah Malbari MD, Kathleen Gibbs MD, Blair Hammond MD

Purpose: The approach to developing residents as teachers is variable, often consisting of workshops or rotations. We created a pediatric resident teaching group (PRTG) open to residents in any year of training to provide a longitudinal approach to developing and utilizing teaching skills and career development as medical educators.

Methods: A longitudinal pilot curriculum of learning theory and technique was taught by senior pediatric faculty in monthly sessions. Topics included Teaching Skills, Setting Goals, Creating a Learning Climate, Questioning as a Tool, Bedside Teaching and Giving Effective Feedback. This enhanced the existing resident as teacher (RAT) curriculum as it spans the entire 3 years of residency, is open to residents in all years of training, provides extensive formal lectures on teaching methods and uniquely allows residents to apply these skills by acting as resident mentors for preclinical medical students. PRTG members developed and taught a series of didactics to medical students and received direct feedback from faculty on content and presentation skills. Subsequently, members supervised medical students in interactive patient experiences. Residents completed a survey measuring their comfort level teaching and a self-assessment of their skills prior to participating in the program and at completion of the first year.

Results: In this pilot year, 16 pediatric residents (26% of residency program) participated, all of whom completed the pre-survey; 13 completed the post-survey. Chi square tests were used for analysis of the data. Residents’ confidence in their ability to effectively teach doubled at the end of the program and their comfort in developing interactive lessons increased three-fold (p-value <0.05 for both). There was an increase in residents’ comfort teaching and perception of teaching skills, with 84% and 92% respectively strongly agreeing or agreeing, based on a 5 point Likert scale. 100% of non-graduating residents who completed the post-survey intend to continue participation in the PRTG.

Conclusion: The PRTG is a novel program to enhance teaching skills as early as intern year and support residents’ development into medical educators. This novel approach and departure from the traditional RAT curriculum increased resident reported use of teaching skills and comfort teaching. Based on pilot year data, this academic year the PRTG has expanded to include 23 residents with implementation of a more in depth curriculum. Future plans include teaching residents to develop curriculums and educator’s portfolios and objective assessment of resident teaching skills before and after the program.
GLOBAL HEALTH

ABSTRACTS 26 – 29
ABSTRACT 26

Development and Implementation of a Novel Electrocardiography Curriculum to Family Medicine Residents in the Dominican Republic

Authors: Aparna Dandekar MD, Josefina Olivares MD, Manuel Lopez-Zapata MD, Arisnachy Diaz MD, Suzanne Bentley MD, MPH

Purpose: In the Dominican Republic, Family Medicine (FM) is an emerging specialty in medicine. Resident physicians at one local FM residency are currently not systematically trained in the interpretation of electrocardiograms (ECG). Lack of proficiency in this skillset has led to identified deficiencies in hospital based care and management of critical care patients.

Methods: A basic ECG skills, interpretation and management curriculum was developed with the goal of filling current curricular gaps, increasing resident ECG exposure and to improve the quality and scope of patient care. Topics are based on an educational needs-assessment conducted with faculty and residents as well as an analysis of current practices and patient pathology. All sessions and pre and post testing were conducted in Spanish. The ECG curriculum was delivered over a 2 week period. The ECG curriculum was evaluated using pre and post testing during training sessions. Test of ECG knowledge and survey of subjective ability with each ECG skill was also measured.

Results: Residents reported increased ability to interpret electrocardiograms (0% pre and 100% post, n=7). Number of ECGs read in previous month increased from 0% pre-training (n=7) to 100% reporting that they interpreted at least 6 ECGs post-training (n=7). Overall knowledge in ECG interpretation also increased from 28% pretest to 86% on post testing.

Conclusion: This novel curriculum specifically targets areas of deficit outlined by local faculty and Dominican FM residents.
ABSTRACT 27

Development and Implementation of a Novel Long Acting Contraception Curriculum to Family Medicine Residents in the Dominican Republic

Authors: Aparna Dandekar MD, Josefina Olivares MD, Manuel Lopez-Zapata MD, Arisnachy Diaz MD, Suzanne Bentley MD, MPH

Purpose: In the Dominican Republic, Family Medicine (FM) is an emerging specialty in medicine. While contraceptive methods are readily available through the public health system, access to long acting contraception remains a challenge due to availability and provider training. Resident physicians at one local FM residency are currently not systematically trained in counseling, insertion, and removal of long acting contraceptive methods.

Methods: A skills based long acting contraception curriculum including intrauterine devices (IUD) and Implanon was developed with the goal of filling current curricular gaps, increasing resident procedural exposure and to improve the quality and scope of patient care in this area. This topic was identified based on an educational needs-assessment conducted with faculty and residents as well as an analysis of current patient care practices and available resources. All sessions and pre and post testing were conducted in Spanish. The curriculum was delivered using formal presentation and simulation based, hands-on education sessions. The curriculum was evaluated using pre and post testing during training sessions. Test of long acting contraception knowledge and survey of subjective ability with each skill was also measured.

Results: Residents reported an improved ability to counsel patients on Implanon use (42.8% pre and 92.8% post n=14), an increased comfort in placing (21% pre and 100% post n=14) and removing Implanon (14% pre and 93% post n=14). Overall knowledge about Implanon improved (56.4% pre and 84.6% post n=13).

Conclusion: This novel curriculum specifically targets areas of training and patient care deficits outlined by local faculty and Dominican FM residents. Outcome measures demonstrate increased knowledge and comfort with these new skills after curriculum completion.
ABSTRACT 28

Airway Training Module as Effective Supplemental Emergency Skills Training for Non-Emergency Medicine Trained Providers in the Dominican Republic

Authors: Ben McVane MD, Natasha Desai MD, Suzanne Bentley MD, MPH

Purpose: As in much of the developing world, emergency medicine (EM) remains in a relatively germinal state in the Dominican Republic, with most Emergency Departments being staffed by non-Emergency Medicine (EM) trained providers. To span the gap between needs and capacities in emergency care, previous efforts have shown improved outcomes in developing countries following short-term training in basic surgical skills, pre-hospital care, and basic life support. The aim of this study was to assess the efficacy of a targeted, short-term intervention to educate non-EM providers on essential emergency airway skills.

Methods: The topic of intubation and airway management was identified as a desired and under-taught subject via an initial needs assessment of two regional hospitals in Santiago de los Caballeros, Dominican Republic. The studied educational intervention entailed a brief, 2-hour presentation on airway management, followed by facilitated, small-group skills practice sessions utilizing adult and infant airway models. Participants included 84 Dominican resident physicians ranging from PGY-1 to PGY-5 level, who participated in the workshop as part of their curricular requirements. Brief pre and post intervention surveys were administered to participants to assess changes in knowledge and confidence regarding intubation and airway skills and perceptions of feasibility of performing intubations within the residents’ clinical practice and based on available hospital resources.

Results: Pre-intervention surveys confirm the previously identified desire for further airway education and absence of adequate training; 99% stated being “interested” or “very interested” to have airway training and 65% report no previous intubation training. Between pre and post-surveys, residents report increased confidence (from 17% to 39% affirming “yes” to feeling comfortable with intubation skills), and demonstrate improved performance on knowledge-based intubation questions (from 61% to 71% of questions answered correctly). The results also suggest that part of the value of this intervention is encouraging participants to pursue further training and broader use for its application; 69% of participants report interest in further emergency medicine education and the number of residents who state that no patients would have benefited from intubation the prior year decreased from 23% to 6%.

Conclusion: Consistent with previous studies, this study suggests that relatively brief but targeted interventions can improve the knowledge, confidence and desire for further improvement in performing EM procedures by non-EM providers in developing countries. Ideally, a cohesively planned group of modular training units might be employed to form a more robust and comprehensive EM training approach for providers working in Emergency Departments in developing countries.
Palliative Care Education and Training Workshop for Caregivers of Cancer Patients in Ghana

Authors: Efe Ghanney BA, Doreen Mensah MD, Edwina Addo MD, Diane Meier MD

Purpose: In Ghana, where there are no hospices, few nursing homes and hospitals are filled to capacity, family caregivers are the linchpin of chronic care delivery, yet despite this responsibility, they receive minimal training and support. This 8-week study assessed the needs of caregivers of patients with cancers and provided education in an identified area of need to equip the caregivers for their role.

Methods: Needs assessment questionnaires were administered to 60 caregivers accompanying their patients at the Radiotherapy Department of the Korle Bu Teaching Hospital in Accra to assess their needs and barriers to caregiving. To be eligible for the study, the participant had to self-identify as a caregiver for a patient with cancer. The caregivers identified many areas of difficulty [e.g. Dealing with Patient Pain (62%); Personal Emotional Support (62%)], however the training module, created and taught by the 1st author, focused only on Patient Signs and Symptoms to Manage since 88% and 85% of caregivers reported having no or little knowledge of treatment side effects and symptoms to watch for respectively. 26 caregivers were enrolled in the training session, conducted during the patient’s treatment. A pre-training, immediate post-training and two-week post-training assessment were conducted.

Results: Training improved knowledge, which was retained at 2 weeks after training. A Friedman Test and Post hoc analysis with Wilcoxon signed-rank tests were conducted with a Bonferroni correction applied, resulting in a significance level of p < 0.017. Median (IQR) score for the pre-training assessment, immediate post-training assessment and 2-week post-training assessment were 5 (4 to 6.75), 10 (9 to 10.75) and 10 (9.25 to 10.75), respectively. The maximum possible score was 11. There was a statistically significant difference between the pre-training assessment score and the immediate post-training assessment score (Z = -4.274, p = .000) as well as between the pre-training assessment score and the 2-week post-training assessment score (Z = -4.035, p = .000). 100% of caregivers reported the training to be very useful.

Conclusion: Family caregivers are willing to participate in training; gain and retain new knowledge; rate utility of training very high. 43% of caregivers would prefer not to attend training at the expense of leaving the patient alone during their appointment. Transportation cost must be covered to ensure caregiver attendance on a separate occasion. Impact of training on patient outcome should be measured in future studies. Results from the needs assessment may be used to formulate ways to alleviate the burden on caregivers. Other modules may be designed to address perceived knowledge gaps. Currently, a palliative care team at Mount Sinai is working to partner with a cancer treatment center in Accra, Sweden Ghana Medical Center, to further training.
SIMULATION I

ABSTRACTS 30 – 33
Validation of Simulated TEE Pathology Modules and Impact of Screen Based TEE Simulation Instructions during Anesthesiology Residency

Authors: Erick Mendoza BA, Sang Kim MD, Samuel DeMaria, Jr. MD, Julian Bick MD, Sasha Shillcutt MD, Muoi Trihn MD

Purpose: Transesophageal echocardiography (TEE) is a valuable skill used in routine cardiac surgery. Traditional clinical training occurs in busy cardiac operating rooms with very sick patients, creating a non-ideal setting for education on TEE. Cardiothoracic anesthesiology fellows usually have precedence in learning and maneuvering the TEE probe in the operating room, which leaves less time and opportunity for learning the basics of TEE use for a novice anesthesiology resident. TEE simulators have been available for several years and preliminary investigations have demonstrated the utility of echocardiography simulators in teaching normal echocardiography. We developed a teaching curriculum to train residents in their first clinical anesthesia (CA1) year how to use a Heartworks (Inventive Medical Ltd., UK) TEE simulator.

Methods: 51 residents in their first clinical anesthesia (CA1) year of training were recruited to participate in the study and block randomized into two cohorts (A and B). Residents in Cohort A received instructional video and TEE simulation training before their cardiac rotation, while residents in Cohort B received the same training after their cardiac rotation. During an instructional session, we walked each resident through a 10-minute video that covers basic cardiac and coronary artery anatomy, TEE probe transducer manipulation, and five basic TEE views (ME4, ME2, ME LAX, ME RV IFOF, TG mid SAX). Afterwards, the residents used the real-time TEE simulator independently, and they were subsequently taught to obtain the five views reviewed in the instructional video session. Residents were given 90-question examinations at various points before and after their respective cardiac rotations and training sessions to assess their learning.

Results: Preliminary data suggests that providing structured TEE simulation training before anesthesia residents undergo their cardiac rotation does not significantly improve their ability to accurately identify normal and abnormal findings on TEE clips after their cardiac rotation (p=.302). The data suggest it is better to provide TEE simulation training after their cardiac rotation (p=.033).

Conclusion: Knowledge attained from this study may inform changes in the education of future residents in perioperative TEE. The use of TEE simulation provides for safer, and potentially more efficient, teaching environments. Residents who are well trained in TEE can improve patient care during surgery as well as improve patient outcomes.
Residents as Educators: Simulation Case development for Pediatric Residents

Authors: Sheera Minkowitz MD, Keila Veiga MD, Sheemon Zackai MD

Purpose: Objectives: 1. Identify important pediatric clinical scenarios to enhance pediatric education specifically focusing on those which incorporate medical knowledge and skills listed as ACGME core competencies. 2. Incorporate case/ scenario simulation development into the pediatric residency program so that residents have formalized opportunity to take the role of educator when creating a simulation case and debrief 3. Develop a standardized template for residents to use when developing case/ scenarios for simulation 4. Develop a database of simulation cases/ scenarios that in addition to traditional emergency/ code scenarios include topics, medical knowledge and skills listed as ACGME core competencies. We propose that incorporating simulation into many aspects of pediatric residency (in addition to the current standard of simulation which includes 'mock codes') will enhance resident comfort with both general and emergent pediatric cases. We aim to give residents the opportunity to be both educators when they develop their own cases and learners when they participate in simulation scenarios. We believe that case development enhances the way a resident learns and remembers pediatric topics and through our standardized template can develop skills necessary to think about a patient case on multiple platforms including communication, medical knowledge and skills. It is our goal to edit each case and accompanying debrief and publish/make them available for residents at the end of every year.

Methods: To date we created a standard template for residents to create their own simulation case. The template was created by reviewing different templates and resources that are currently available to create a simple 2 page template that is both easy to prepare and use. The resident is encouraged to refer to a list of pediatric topics that should be covered during residency to create their case. The standardized template guides the resident to establish learning objectives, identify medical knowledge and skills that will be covered during the scenario, and identify props that will be needed. They are also required to prepare a debrief of the scenario. The resident must include references as well.

Results: To date 6 cases have been prepared using the template. Now that we have 6 cases we plan on studying the ease at which the resident can prepare, develop and use the case using our format. We plan to study the curriculum with an emphasis on how the resident learns when in the position of the educator rather than as the traditional participant in a simulation scenario. We will also be editing the cases for quality and for preparation for distribution.

Conclusion: We hope to show that simulation case development in the role of educator is an effective learning tool to study core topics in pediatrics and that residents may learn better when they are the educator.
ABSTRACT 32

The influence of death in simulation-based anesthesiology training: How much is too much?

Authors: Stefan Samuelson MD, Andrew Goldberg MD, Hardikkumar Shah BS, Alan Weinberg MS, Anthony DeMaria PhD, Samuel DeMaria MD

Purpose: While high-fidelity patient simulation has gained ever-increasing support as a tool for anesthesiology education and assessment, few guidelines have been established to maximize its efficacy. In recent years there has been debate regarding the influence of 'failure', i.e. patient death, on learning and performance, and little data exists to support or oppose its inclusion in anesthesiology training. This study examined whether death of simulated patients could be correlated with objectively-assessed performance in a simulated curriculum.

Methods: After IRB approval, PGY-2 Anesthesiology residents from our institution were recruited to participate in a 12-week structured simulation-based didactic curriculum. Each week, residents were presented one or two operating room scenarios in which they had to manage a simulated patient. The residents were divided into three cohorts: 1) patient always dies, 2) patient never dies, and 3) patient dies approximately 50% of the time in an unpredictable fashion. After 8 weeks of the simulation-based curriculum had been completed, residents were then objectively scored on several remaining scenarios by blinded attending anesthesiologists using the validated Anesthesia Non-Technical Skills (ANTS) scale (this scale does not analyze patient outcome, but rather assesses task management, team working, situation awareness, and decision making). Linear regression was carried out to analyze the effect of cohort assignment on objective performance in these selected scenarios.

Results: 26 Anesthesiology residents were recruited to complete the simulation-based curriculum, of which 9 were assigned to the “patient never dies” cohort, 9 to the “patient always dies” cohort, and 8 to the “patient dies unpredictably” cohort. All participants completed all scenarios. Assignment to the “patient never dies” cohort and the “patient dies unpredictably” cohort were both associated with higher ANTS scores in separate scenarios (p=0.0185 and p=0.0054, respectively). Conversely, assignment to the “patient always dies” cohort was associated with poorer performance as measured by the ANTS (p=0.0057).

Conclusion: In this study, residents who predictably experienced patient death in the simulated scenarios performed worse in non-technical skills assessments as measured by the ANTS. Residents who never experienced patient death, or who experienced patient death in an unpredictable fashion, did significantly better. While further investigation may clarify this association, it may be that expectation of failure predisposed participants to lackluster performance by undermining confidence or encouraging emotional detachment over time.
Grace under Fire: Identifying Predictors of Engagement and Success in Simulation-based Education

Authors: Stefan Samuelson MD, Andrew Goldberg MD, Hardikkumar Shah BS, Alan Weinberg MS, Anthony DeMaria PhD, Samuel DeMaria MD

Purpose: With increased utilization of high-fidelity human patient simulation for education and assessment in anesthesiology, it has become apparent that some people engage readily with the simulated environment, while others stubbornly resist. To facilitate learning in this medium, it may be possible to identify characteristics predisposing participants to such behavior. 'Mindfulness', a concept borrowed from the psychology literature, is generally defined as focusing one's attention in a nonjudgmental manner or accepting the experience occurring in the present moment. Furthermore, willingness to engage in simulation, i.e. suspend one's disbelief, may confer a more emotionally charged experience and even an enhanced ability to learn from a simulated scenario. In this study we examine whether a measure of Mindfulness can predict emotional impact and improved performance.

Methods: After IRB approval, PGY-2 Anesthesiology residents were recruited to participate in a 12-week simulation-based didactic curriculum. Prior to beginning, each resident completed the Kentucky Inventory of Mindfulness Scale (KIMS), in which a higher scale indicates increased mindfulness. Residents participated in one or two structured operating room scenarios each week. After 8 weeks, resident performances on four remaining scenarios were objectively rated by blinded attending anesthesiologists using the Anesthesia Non-Technical Skills (ANTS) scale (this validated scale assesses task management, team working, situation awareness, and decision making). At the end of the curriculum, each participant completed an Impact of Events Scale (IES, a measure of psychological response to a stressor in which a higher score indicates higher impact) and were asked 1) how helpful and 2) how traumatic they had found the curriculum (1-5, with 5 being highest). Multivariable analysis was carried out to analyze the effect of KIMS score on IES, self-report of trauma/helpfulness, and objective performance.

Results: 26 Anesthesiology residents were recruited, all of whom completed the entire 12-week simulation-based curriculum. Higher KIMS score was significantly associated with higher IES score (p=0.005) and with greater subjective report of trauma (p=0.002). Comparing objective to subjective assessment of performance, higher ANTS score was associated with greater self-report of trauma (p<0.0169) and of helpfulness (p<0.0246).

Conclusion: In this study, greater mindfulness was associated with increased post-curriculum emotional impact, subjective report of helpfulness/trauma, and enhanced performance in simulated scenarios. As all of these are suggestive of “engaged” participants, it may be that a measure of mindfulness can be employed in the future to help identify those who would benefit most from simulation-based learning.
Recipe for a Healthy Lifestyle: An Obesity Prevention Program for Hispanic Mothers of Children Ages 0-5 in East Harlem, New York

Authors: Lindsey Waldman MD, RD, Marilyn Figueroa RD, Heather Mitchell LMSW, Leora Mogilner MD

Purpose: More than 1 in 4 children in Headstart and elementary school in East Harlem are obese. Little exists in the literature about obesity prevention programs in this very young age group. The purpose of this study was to assess the impact of an obesity prevention program on knowledge, attitudes and behaviors in Hispanic mothers of children ages 0-5 years.

Methods: With a grant from the Community Pediatrics Training Initiative, we developed an obesity prevention program for parents of children ages 0-5. After reviewing the existing literature, pediatric residents on their community and advocacy rotation, together with a nutritionist, developed the 10-week curriculum. The nutritionist led classes with pediatric residents and nutrition interns at a local community organization. The curriculum included topics such as feeding practices, fruit and vegetable consumption, screen time and exercise. It was designed to provide parents with the skills they need to promote healthy active living. Each class was held in Spanish and included recipe preparation and exercise. A pilot program was held from May-July 2014 and after analyzing pilot data, the curriculum was revised and run again from October-December 2014. Pre/post surveys were obtained to assess changes in knowledge, attitude and practices after participation as well as a short survey with open-ended questions. We analyzed textural responses using qualitative methods and continually compared and contrasted responses to identify themes. Chi square and t-tests were used to analyze data.

Results: 13 mother-child dyads enrolled and 7 completed the course. All families were Hispanic, 69% of mothers did not complete high school and 77% participated in the WIC supplemental food program. Mean mother’s BMI was 28.4 (± 4.6) kg/ m2. At the end of the course, 86% of families ate together 5+ times/week, up from 38% pre-course, trending towards significance (p=0.055). Similarly, at the end of the course, 43% of families had TV in the bedroom, down from 85% pre-course, trending towards significance (p=0.05). At the end of 10 weeks, all parents reported that they would recommend this class and 100% felt well prepared to feed their child at home compared to before the classes. The main themes identified by the participants included the importance of exercising and healthy eating.

Conclusion: After completion of the program, all participants felt well prepared to feed their children and there was a trend towards more family meals and less TV in the bedroom among participants. The lack of significance in these results may be due to the small sample size. We plan on replicating this study with a larger population and are formalizing the curriculum with the goal of dissemination. We are in the process of seeking community partners to train additional “trainers” to increase the scope and reach of the program.
ABSTRACT 35

Characteristics of Patients Offered Rapid HIV Testing in the Emergency Department and Barriers to Testing

Authors: Christie Lech MD, Ericka Jaramillo BA, Joseph Zaheer BA, Suzanne Bentley MD, Alex Manini MD, Stuart Kessler MD, Philip Fairweather MD

Purpose: New York State law mandates that patients between ages 13-64 receiving hospital care be offered HIV testing. A significant portion of underserved populations with poor access to primary care is seen in emergency departments (ED). Previous surveillance data from the zip code of the study site showed it to have the highest rate of new HIV diagnoses in the borough. This study at an urban trauma center will describe patients offered HIV testing in the ED and determine barriers to testing. This information provided will be utilized to educate healthcare providers regarding population-specific barriers to HIV testing, and allow them to develop improved emergency department-based screening initiatives.

Methods: This was a cross-sectional study surveying a convenience sample of adult ED patients on demographics, sexual practices, and HIV knowledge. The study outcome was opting for HIV testing and the odds of the outcome were calculated. Confounders were controlled for using multivariable logistic regression and calculated adjusted odds ratios using 95% confidence intervals. Assuming a 40% opt-in rate, estimated revealed the need to survey 300 subjects in order to be able to demonstrate a 3-fold odds difference between groups with 80% power.

Results: 294 surveys were collected. Patients who opted for testing had more sexual partners in the past 12 months and a lower frequency of condom use. Univariate analysis identified the following factors associated with opting in: cost, confidentiality, and history of prior testing - (p < 0.0001, OR 19.081 CI 6.555-55.538), (p < 0.0001 OR 14.771 CI 3.424-63.725), and (p < 0.05, OR 2.256 CI 1.056-4.820), respectively. Using multivariate analysis, acceptance of HIV testing was highly associated with cost, confidentiality, and having previously been tested, (p < 0.05). Knowledge scores were not significantly associated with opting for/against HIV testing.

Conclusion: Predictors of patients accepting HIV testing include that the test is free and confidential. Another characteristic of those who opted for HIV testing was having had previous testing for HIV, in contrast to similar studies that showed that to be a reason why patients to decline HIV testing. Knowledge scores were not significantly associated with opting for/against HIV testing, emphasizing that education may not address all concerns regarding testing. Data from this study will be used to educate mid-level providers, attending physicians, and HIV counselors on factors that impact patient acquiesce towards testing. These providers can tailor protocols to reduce/remove this barriers to testing, while maximize screening of those at highest risk for HIV. Furthermore with the above knowledge in hand, medical providers can develop educational initiatives to provide patients with correct information regarding HIV/AIDS, dispelling myths, decreasing stigma, and empowering patients towards achieving better health.
A Community-based Approach to Improving Health Literacy on Pediatric Health Topics Identified by Immigrant Parents

Authors: Lara Crystal-Ornelas BA, Dorothy Calvani RN, Cappy Collins MD, Alexandra Leader MD, Leora Mogilner MD, Ann-Gel Palermo DrPH

Purpose: Health literacy is an essential part of active involvement in health care. Limited health literacy increases the disparity in health care access among exceptionally vulnerable populations like immigrant parents. A community-based organization delivering a holistic model of human services to a predominantly immigrant population found that immigrant parents of infants and toddlers identified a lack of understanding of specific pediatric health topics. A community-based approach to parent health education was developed to raise parent health literacy and confidence levels in order to reduce the potential risk of experiencing disparities in health care access.

Methods: A community-academic partnership was established and used a mix-method study design. Three focus groups and a survey were used to identify core pediatric health topics for which immigrant parents requested additional instruction. A team of community health educators and physicians developed hands-on curricula rooted in the principles of health literacy. The curricula were delivered through bilingual workshops and through a family walking/educational program. Participants completed pre/post-surveys after each session. Paired t-tests were used to analyze responses.

Results: 51 parents completed the surveys and identified three topics of greatest interest to them: first aid, asthma, and fever/medication administration. A total of 49 parents participated in the workshops and completed pre/post surveys. All participants were either Medicaid beneficiaries or uninsured. On a test of knowledge of first aid, there was a 37.25% improvement from pre to post test (p=0.0001). After participating in the workshop on fevers/medication administration, self-perceived confidence levels rose 20% (p=0.0047). 100% of participants found the workshops helpful.

Conclusion: This community-academic partnership approach resulted in the development of meaningful and useful curricula. Future plans include dissemination of workshops to other sites and development of additional curricular modules. Additional research is needed to determine whether the workshops have a lasting impact on parental knowledge and confidence levels.
You've Got Books: Reach Out and Read at Three New York City Sites

Authors: Leora Mogilner MD, Cynthia Katz MD, Thomas Chavez MD, Marcy Stein-Albert MD

Purpose: In June, 2014, the AAP published a policy statement encouraging early literacy promotion in pediatric primary care, underscoring the importance of the Reach Out and Read (ROR) program in pediatric practices. ROR provides pediatricians with the tools they need to fulfill the AAP recommendations. Studies have shown ROR's effects on early language skills and home literacy environment, but there is no recent data about fidelity of the model and home literacy environment in NYC families participating in ROR. Our goal was to compare the effectiveness of the implementation of the ROR model and the home literacy environment at multiple sites in NYC.

Methods: Parents of children 6 months-5 years presenting for pediatric primary care were surveyed at 3 NYC ROR sites. Parents were asked about whether a book was given at the visit, if they received anticipatory guidance about reading, the waiting area experience, home literacy practices, and attitudes towards reading. IRB approval was obtained at each institution. Chi square, t-test and multiple linear regression analyses were used.

Results: 160 parents participated in the study; 51% were African American, 38% Hispanic, 8% Asian and 3% other. Percent of patients receiving books at checkups varied across sites, with 92% of patients receiving books at site 1, 96% at site 2 and 71% at site 3. The difference in books given between sites 1 and 3 and sites 2 and 3 were significant (p=.01, p=.003). The frequency that doctors spoke with parents about reading also varied across sites--96% of doctors at site 1 spoke about reading compared to 85% at site 2 and 75% at site 3. The difference in counseling given between site 1 and 3 was significant, with p=.009. 100% of parents who received a book and advice about reading agreed or strongly agreed that they felt encouraged to read to their child. The number of days per week children were read to also varied across sites, ranging from 4.8 days/wk (SD 2.2) at site 3, to 5.2 days/wk (SD 2.1) at site 2 to 5.8 days/wk (SD 1.5) at site 3 (p=.03.) After controlling for child's age, race and ethnicity in multiple linear regression analysis, these differences persisted (p=.02.)

Conclusion: In this multi-site study of families participating in ROR, most parents received books and anticipatory guidance about reading from their health care providers, read often to their children and believed that reading was important. However, more books were given and counseling occurred more often at certain sites and this seems to correlate with an increased frequency of reading to children. This underscores the strength of the ROR model and the value of ensuring the program is properly implemented. Future studies are underway to further elucidate which factors promote success at each ROR program.
ABSTRACT 38

SinaiPAC: Development and Impact of the Pediatric Advocacy Club at Mount Sinai Kravis Children's Hospital

Authors: Tessa Scripps MD, Brittany Solar MD, Genna Ableman MD, Cappy Collins MD, Leora Mogilner MD

Purpose: ACGME guidelines mandate that pediatric residents receive training in advocacy and community pediatrics. Pediatric residents at Mount Sinai fulfill this requirement by participating in a month long 'Advocacy/Community Pediatrics' rotation. SinaiPAC, the pediatric resident advocacy club at Kravis Children's Hospital, provides a novel, hands-on opportunity for residents to engage in advocacy and community pediatrics over the course of three years of training, enabling them to learn the skills necessary to become effective advocates and use these skills to develop sustainable advocacy projects with measurable outcomes.

Methods: SinaiPAC is a voluntary club open to all pediatric residents and medical students at the Icahn School of Medicine. Approximately 10 residents and students meet monthly with faculty advisors to plan projects designed to improve child health in East Harlem. Projects have included: a quarterly advocacy newsletter sent to all pediatric faculty and staff, parent health education sessions delivered in the resident clinic, a community-based walking program in East Harlem that teaches health topics to parents while informing them about health resources in their community, and development of a website for physicians that provides access to local and national resources for patients. SinaiPAC encourages participation in American Academy of Pediatrics (AAP) initiatives in New York State and assists residents to apply for grants to fund projects. In order to assess the impact of the program, anonymous surveys were sent electronically to all former and current participants in the club and records were kept of grants received to fund group projects.

Results: 7/7 former residents and 13/13 current residents surveyed responded. On a Likert scale where 1=strongly disagree and 5=strongly agree, respondents' average score was 4.25/5 for the statement "I feel that SinaiPAC is an important part of my residency training." As a result of their involvement with SinaiPAC, respondents rated 4.4/5 that they "have greater comfort in collaborating with colleagues on advocacy related projects" and 4.15/5 that they "have greater skill advocating for their patients." 16/18 respondents stated that they either are continuing advocacy work in their current jobs or plan to continue in advocacy-related work either after they graduate. The AAP awarded 4 grants to members of SinaiPAC over the course of a 3-year period for project development and implementation.

Conclusion: SinaiPAC provides pediatric residents with opportunities to directly engage with the community and enriches trainees’ skills and comfort level in advocating for pediatric patients. Furthermore, SinaiPAC successfully encourages residents to continue advocacy-related work after graduation from residency. In the future, SinaiPAC plans to collaborate with other residency training programs to promote health advocacy beyond the pediatric population. Plans are also underway for longer-term follow up to assess the impact of participation in the club on physicians’ ultimate practice of pediatrics and sense of community engagement.
QUALITY IMPROVEMENT

ABSTRACTS 39 – 43
ABSTRACT 39
2015 BLUE RIBBON WINNER

The Effects of an Educational Intervention and Changes to the EMR on Screening for Post-Partum Depression in an Inner City Pediatric Clinic

Authors: Suzanne Friedman MD, Ellis Rochelson MD, Robert Fallar PhD, Leora Mogilner MD

Purpose: Postpartum depression (PPD) is a common medical problem experienced by nearly 20% of new mothers. Untreated PPD is associated with behavioral and developmental problems in children, therefore, identification and treatment is imperative. Pediatric residents often treat a low income population at high risk for PPD, yet studies show that residents screen less often than attendings. Our goal was to examine the effects of both a didactic session about PPD diagnosis and treatment and modification of the EMR template to include PPD screening questions on providers' comfort and self-reported screening for PPD.

Methods: The didactic session about PPD was given to physicians in the resident continuity practice; pre and post surveys explored physician comfort and self-reported screening for PPD. Following the intervention, a retrospective chart review was conducted to look at the cumulative impact of both the educational intervention and the introduction of screening questions into the EMR on pediatricians’ documented screening and referrals. 300 charts were reviewed, 100 from each of three time periods: Group 1--before the educational intervention, Group 2--after the educational intervention but before introduction into the EMR and Group 3--after introduction of screening into the EMR. Charts were randomly selected to include equal numbers from each clinic day. Chi square and t-tests were used for analysis.

Results: 40 pediatricians attended the educational intervention, and 17 who attended completed the post-survey. Physicians’ self-reported screening for PPD improved from 22% to 70% (p<.0001). 300 charts of patients 0-6 months were reviewed. 50% of mothers were Hispanic and a majority of families resided in East Harlem. In Group 1, no mothers had documented screening for PPD, in Group 2, 2% were screened and in Group 3, 74% had documented screening (p<.001). Of the mothers screened, 10% screened positive for PPD, consistent with national data, but only 14% had documented referrals to a mental health provider for treatment. Within Group 3, there was no statistical significance between full term and preterm babies regarding screening, however, patients with medical problems were less likely to be screened than those without (p<.001.)

Conclusion: The combination of provider education about PPD and screening questions integrated into the EMR enhanced PPD screening rates among physicians in a busy, urban resident practice. An increase in documented screening was also seen after the EMR change. While referral rates did improve with the EMR, only a small minority of those women who screened positive were referred to mental health professionals. Future research is ongoing to see if the new screening template leads to increased referrals on a longer term basis, as physicians become more familiar with the referral process and options available, as well as the effects of screening and referral on ultimate maternal-child outcomes.
Do US Medical Graduates Know How to Use Screens for Cognitive Disorders and Falls?

**Authors:** Christine Chang MD, Eileen Callahan MD, William Hung MD, David Thomas MD, Rosanne Leipzig MD, Linda DeCherrie MD

**Purpose:** The Minimum Geriatric Competencies for medical students require interns to be able to screen for falls and cognitive impairment. This study evaluates self-perceived ability to perform and interpret these screens in Internal Medicine (IM) residents who graduated from medical school prior to the publication of these competencies.

**Methods:** From 2005 to 2010, all second-year IM residents at Mount Sinai participated in a mandatory geriatric ambulatory care rotation and prospectively completed a questionnaire that measured knowledge about familiarity, ability to administer, interpret and intervene on results of several geriatric assessment tools.

**Results:** 188 residents completed the questionnaire. 95% of whom graduated from an accredited US medical school. Pre-curriculum, over 95% of residents reported that they were familiar with the more commonly used geriatrics assessments such as the Mini Mental State Exam (98.9%), the 3-item recall (97.3%), and clock draw test (96.7%), but less than 60% were familiar with others (ie animal naming (59.6%), Timed get up and go (53.3%), and 3 balance stances (24.5%). Despite familiarity with the first 3 tests of cognition, fewer than 40% knew what to do with an abnormal test [Mini Mental State (39.2%); 3-item recall (35%); clock draw test (31.4%)]. This pattern held true for the other three less familiar tests.

**Conclusion:** The majority of these US medical graduates did not know how to use common screens for cognitive impairment and falls in their care of older adult patients. These numbers are striking, particularly for PGY-2 residents who are midway through residency. These residents graduated medical school prior to 2008. It will be important to see whether this deficiency has been remedied by the introduction, in 2009, of the Minimum Geriatric Competencies whose purpose is to assure competent care to older patients by new interns. 1 Academic Medicine. 84(5):604-10, May 2009
Redesigning the Electronic Health Record to Improve Advance Care Planning

Authors: Christine Chang MD, Shahla Baharlou MD, Alan Briones MD, Maribel Jacome BA, Francis Alphonso BA, Stephen Berns MD

Purpose: Background: Advanced Care Planning (ACP) is a core component of patient-centered care. In 2015, CMS will require mandatory reporting of this quality measure for patients 65 years and over. Based on multiple needs assessments, in-services and quality improvement intervention results, administration approved redesign of the EPIC Electronic Health Record (EHR) to improve patient-centered care and compliance with this CMS quality measure. Objectives: To redesign the EPIC EHR to improve documentation and retrieval of patient's advance care planning preferences and medical decisions across various setting within our institution.

Methods: To redesign the EPIC EHR to improve documentation and retrieval of patient’s advance care planning preferences and medical decisions across various setting within our institution.

Results: The NEW- ACTIVITIES TAB: “Advance Care Planning” was developed for the EPIC EHR that houses the following ACP content across settings (ED, Inpatient and Outpatient): 1. Medical Decision Makers, 2. Code Status Orders, 3. Advance Care Notes, 4. ACP Scanned Documents. Clinical Decision-Support Tools such as ACP templates and comfort care order sets were developed to facilitate documentation of advance directives/family meeting discussions, and implement patient’s goals of care when hospitalized in acute care settings. This EHR product was made available to providers on March 4, 2014 with ongoing provider education about the ACP initiative. Since release, compliance with ACP documentation has increased 15% (from 51.3% to 60.3%, p=0.0001, Fisher exact test) in the geriatric primary care practice. Follow up survey of geriatric providers showed that 84% felt that the EHR product was easy to use even though only 48% received formal in-service about the product.

Conclusion: Standardizing documentation and retrieval of ACP in the EPIC EHR can help improve provider’s ability to document patient’s advance care plans and medical decisions and improve compliance with CMS quality measures.
ABSTRACT 42

Using Quality Improvement Strategies to Improve Advance Care Planning at an Academic Geriatric Primary Care Clinic

Authors: Christine Chang MD, Beata Chauhan DO, Amy Kelley MD, Shahla Baharlou MD, Alan Briones MD, Maribel Jacome BA, Francis Alfonso BA, Stephen Berns MD

Purpose: Background: CMS requires medical practices to document advance care planning (ACP) in patients over 65 years of age. Our academic geriatric primary care clinic began monitoring compliance of this quality measure in 2009. Initial ACP documentation rate was 12.8%. As a result, we sought to improve ACP documentation using traditional quality improvement (QI) techniques. Objectives: To describe the ongoing QI interventions that are being employed to improve advance care planning for patients at Mount Sinai Geriatric Practice

Methods: In-services on how to document ACP in EPIC Electronic Health Record (EHR) were completed in 7/2009, 1/2012, 1/2013, and 1/2014. Needs assessments and qualitative interviews* conducted in 6/2010, 8/2011*, 12/2012, & 1/2014 identified the need to standardize the ACP documentation and retrieval process in EPIC EHR. During Ayr 2011, EHR products were developed and piloted in ambulatory Geriatrics and Palliative Medicine. Administration then approved further redesign of the EPIC EHR to address ED and inpatient reported cases of inappropriate patient care being given due to difficulties with accessing and communicating patient’s advance directives. In AY 2013, a hospital-wide EHR solution to address barriers to ACP completion/retrieval and care coordination was developed. In 3/2014, providers were educated about the NEW- ACTIVITIES TAB: “Advance Care Planning” that was developed for the EPIC EHR that houses the following ACP content across settings (ED, Inpatient and Outpatient): 1. Medical Decision Makers 2. Code Status Orders 3. Advance Care Notes 4.ACP Scanned Documents

Results: The use of yearly in-services helped to increase ACP documentation from 12.8% to 27.5% (12/2011). Introduction of the geriatric specific EPIC EHR products improved ACP documentation to 51.3% (3/2014). Introduction of the hospital-wide EPIC EHR products improved ACP documentation to 60.3% (p=0.0001, Fisher exact test).

Conclusion: QI strategies can be used to improve advance care planning for ambulatory geriatric patients in primary care. Standardizing documentation and retrieval of ACP in the EPIC EHR can help improve provider’s ability to honor patient’s advance care plans and medical decisions and improve compliance with CMS quality measures.
ABSTRACT 43

Patient Preoperative Physical Status Assignment Varies Significantly by Department

Authors: Christopher Curatolo MD, Andrew Goldberg MD, Muoi Trinh MD

Purpose: The accurate assignment of the American Society of Anesthesiologists physical status (ASA-PS) ensures that patients receive the corrective amount of preoperative testing and evaluation while minimizing the waste of precious perioperative resources. This raises several important questions. How do we educate residents on the correct assignment of ASA-PS? How do we provide continuing education for faculty members? Finally, is there a need to educate non-anesthesia providers (e.g. hospitalists) who also perform preoperative evaluations and assign ASA-PS? To investigate the potential educational needs for residents, faculty, and non-anesthesia providers, we studied the variation that exists in assigning ASA-PS. While many studies have examined these differences amongst anesthesia providers, none have examined the difference amongst non-anesthesia providers. As more centers mandate formal, multi-specialty preoperative evaluation for patients with high ASA physical status, the significance of the accurate assignment of this status has become incredibly important for hospitals and payers as well as the public whose tax dollars support much of our health care system.

Methods: We administered an IRB-approved survey that asks the ASA-PS of patients as described in 20 clinical vignettes. Surveys were administered to anesthesiology faculty, fellows, and residents at the Mount Sinai Medical Center (n=94). Surveys were then administered to surgeons as well as non-anesthesia providers that conduct preoperative evaluations (n=135). Using Chi-Square analysis and Fisher’s Exact Test, we studied the variation in our own department as well as the interdepartmental variation that exists in our institution.

Results: 20% of questions found a statistically significant difference between anesthesiology faculty and anesthesiology resident’s responses and marginal or greater significance in 35%. Interdepartmental variation (i.e., variation between the department of anesthesiology and medical/surgical departments) was statistically significant in 90% of questions. (Poster will contain multiple graphs displaying this).

Conclusion: Our preliminary results show statistically significant variation between anesthesiology faculty and residents. Interestingly, anesthesiology faculty themselves showed great variation in their responses. There was also great variation between anesthesiology responses and non-anesthesiology departments such as general surgery and medicine. While data analysis is ongoing, our initial findings show a clear educational challenge for multiple providers across levels of training. Innovative solutions will be required to increase the accuracy of ASA-PS assignment.
Redesigning Morbidity and Mortality Conference in Emergency Medicine

Authors: Felipe Teran Merino MD, Suzanne Bentley MD, Benjamin Schnapp MD, Kaushal Shah MD

Purpose: The Morbidity and Mortality (MandM) conference has an important educational role and promotes quality improvement and patient safety. However, non-standardized presentations, unstructured discussion of errors, and lack of actual practice change, have been recognized as limitations of the format. Objective: Redesign MandM to enhance both the education value and its role as a tool to detect patient safety issues and design/implement quality improvements.

Methods: A four-step curriculum has been designed for M&M. 1) Systematic case identification and incorporation of near-miss cases. Under the current system, the majority of cases are referred from administration due to bad outcomes or complaints. Preexisting Clinical Quality Review (CQR), a systematic residency-wide QA process that uses residents to review large-number of cases on a monthly basis, will be integrated into this new process allowing to identify high-yield cases. A system for anonymous referral of cases by residents and nursing will be instituted in order to allow discussion of near-miss cases. 2) Case analysis with predefined format, with focus on the identification of cognitive and system issues, and preparation of a structured discussion. 3) Conference discussion, brief review of pertinent literature and input from other specialties according to each case. 4) Post-conference analysis. Resident sends summary of points to residents and faculty and creates a M&M portfolio summarizing the review process, analysis of types of errors, literature review and lessons learned from peer discussion during M&M.

Results: This new structure has the potential to enhance resident learning experience and improve the quality of patient care through systematic educational discussion and case analysis. Additionally, the M&M portfolio is an educational tool for future use and a tangible proof of experiential learning for residents.

Conclusion: We have created a redesigned format for our Morbidity and Mortality (M&M) conference in Emergency Medicine which has the potential to enhance resident learning experience and improve the quality of patient care.
ABSTRACT 45

Why Perioperative Errors Occur and How to Fix Them

Authors: Christopher Curatolo MD, Patrick McCormick MD, Jaime Hyman MD, Yaakov (Jake) Beilin MD

Purpose: Complications and near misses are an inevitable part of providing medical care. Highly complex industries such as the aviation and nuclear fields provide us, however, with numerous examples of how to reduce errors. Combining these examples with modern technology the field of medicine is poised to enter a new chapter where care is delivered in a highly accurate, efficient, and reproducible way with a complication rate as low as possible. The aim of our study is to use modern tools to study perioperative complications, determine why they occur, reduce the error rate, and provide continuous feedback monitoring to ensure that improvements are sustained.

Methods: Over the past year, our team of anesthesiologists with strong backgrounds in patient safety, quality, and process improvement designed a large, ten-year retrospective analysis that harnesses modern big-data resources and combines it with human judgment. We maintain a vast electronic database containing information on >500,000 surgical cases. Additionally, our department has a robust performance improvement process that reviews and tracks all perioperative complications. Our goal is to merge these two resources using a custom metadata-driven electronic data capture tool (REDCap). Our team of anesthesiologists will review each of the roughly 1,200 performance improvement-reported complications over the past ten years to determine multiple pieces of data such as the type of complication (e.g., neurological-CVA vs cardiac-perioperative MI), specialty involved, complication location, time of day, provider handoffs, provider experience, root causes responsible, and whether standard of care was met. Additionally recorded will be short term patient outcomes such as unplanned admission of outpatient surgeries, extended PACU stays, and unplanned ICU admissions. Long term sequelae such as residual injury or death will also be recorded. Two anesthesiologists will dual-log this information to increase data accuracy with formal resolution of disagreements. Next, cases will be matched to our department’s database and additional information added such as age, gender, BMI, inpatient/DAS/ambulatory, NPO status, ASA class, PMH, procedure performed, anesthetic, surgery length, intubation length, medication dosages, etc. Next, data analysis will occur with Mount Sinai statisticians to include propensity score matching to cases with similar data where a complication did not occur. Multivariable regression may also be used to help determine association.

Results: The study is in progress.

Conclusion: Errors must be meticulously studied in order to determine why they occur. This is the only way to effect significant and lasting improvements in patient safety, quality, and process improvement. Our study has great potential to enlighten us on why rare complications occur and how we can avoid them by employing modern big-data tools coupled with human judgment in a new and exciting way.
Impact of Resident Participation on the Outcomes of Outpatient Plastic Surgery Procedures

Authors: Benjamin Massenburg BA, Paymon Sanati-Mehrizy BA, Eric Jablonka MD, Peter Taub MD

Purpose: Ensuring maximum patient safety as well as a complete surgical experience is of utmost importance in training for plastic surgery. As plastic surgical training relies on resident participation in various procedures, we must ensure adequate hands-on operative time while maintaining the best possible outcomes for the patient. The effect of resident involvement on the outcomes of outpatient plastic surgery procedures remains largely unknown. We assess the impact of resident participation on surgical outcomes using a prospective, validated, national database.

Methods: This study retrospectively reviewed the American College of Surgeons National Surgical Quality Improvement Program (ACS-NSQIP) database and identified all outpatient procedures performed by plastic surgeons that had information regarding resident participation. Multivariate regression models were constructed to assess the impact of resident involvement when compared to attendings alone on 30-day wound complications, total complications, and reoperation rates.

Results: A total of 18,639 outpatient procedures performed by plastic surgeons were identified, with 12,412 performed by an attending only and 6,227 with residents participating. From 2007-2012, the total complication and reoperation rates are elevated with resident participation. However, when stratified by year, total complications and reoperations in procedures with resident involvement are trending down, and even displaying a trend towards safer procedures with resident involvement in 2012.

Conclusion: Though resident involvement has historically been associated with increased surgical morbidity, recent years have no longer shown a significant difference in total adverse outcomes between procedures with residents and those with attendings only. This suggests that plastic surgical residency training is successfully improving in both outcomes and safety.
ABSTRACT 47

Is Faulty Knowledge the Most Common Cause of 72-Hour Returns in an Emergency Department Residency Program?

Authors: Benjamin Schnapp MD, Jean Sun MD, Courtney Cassella MD, Candice Cruz MD, Sumintra Wood MD, Clark Owyang MD, Zara Mathews MD, Bradley Shy MD, Reuben Strayer MD, Kaushal Shah MD

Purpose: Few studies have examined which types of cognitive error result in ED return visits. Understanding these errors may guide emergency physician training and practice. Our objective was to determine if faulty knowledge is the leading cognitive error made among cases of ED 72-hour returns.

Methods: A retrospective chart review was performed on all second visits to the ED that resulted in an admission within 72 hours after discharge from the first ED visit (“72-hour returns”) over an 8-month period at an urban tertiary care center with a PGY1-4 residency program. Two trained reviewers independently categorized cases into “possible error” (a preventable error made during the first visit that resulted in the second visit) or “no error.” All cases categorized as “no error” by both reviewers were excluded. A team of trained physicians blinded to the study objective assigned as many cognitive errors types as appropriate to remaining cases by consensus using taxonomy based on Australian Patient Safety Foundation classifications.

Results: 271 cases of 72-hour returns contained 131 (48%) cases categorized as “no error” and 140 (52%) as “possible error.” The team confirmed error in 52 cases (19%) and identified 120 instances of cognitive error (mean of 2.3 errors per case), which fell into the following categories: Faulty Knowledge (6% [95%CI:3-12%]), Faulty Information Processing (45% [95%CI:36-54%]), Faulty Verification (31% [95%CI:23-40%]), and Faulty Information Gathering (18% [95%CI:12-26%], p<0.05). The most common specific types of error were Misjudging the Salience of a Finding and Premature Closure (both 13% [95%CI:8-20%]).

Conclusion: In a tertiary urban emergency department staffed by PGY1-4 residents, EM physicians committed significantly more cognitive errors due to faulty information processing than faulty knowledge. Future studies may examine how changes in training curricula can improve decision-making in the ED.
INTERPERSONAL SKILLS

ABSTRACTS 48 – 51
Assessing Empathy Shifts in Medical Students Transitioning from Pre-clinical to Clinical Years

Authors: Prapti Chatterjee BA, Kaylan Baban MD, MPH

Purpose: The goal of this project is to distribute the Jefferson Scale of Physician Empathy (JSPE) Student Version to medical students in Year 1-4 in order to determine if there is a difference in empathy scores between students in different years of medical school, and further if there is a difference in empathy scores between students who entered medical school through the HuMed pathway versus the traditional pathway.

Methods: Distribute 100 copies Jefferson Scale of Physician Empathy (JSPE) Student Version at mandatory class meetings for 1st, 2nd, 3rd and 4th year classes, to utilize Jefferson's algorithm to score the various surveys.

Results: Results pending survey distribution to 3rd year students on February 5th, 2015 and 4th year students on February 19, 2015. Results analyzed for changes in empathy scores by preclinical vs clinical status and by pathway to medical school entrance. Results in process for surveys distributed to 1st and 2nd year students with 78/100 and 71/100 responders respectively.

Conclusion: Numerous studies have established that there is a significant decline in empathy as medical students transition from their preclinical to clinical years. Additionally, studies have found that students who self-assess as more empathetic are perceived as less competent by their peers. This topic requires further investigation since physician empathy is linked not only to improved patient outcomes, but also to increased resilience, a quality vital for combating student and doctor burnout. Though previous authors have found that students in traditional four-year medical school programs have a higher baseline empathy level than those in early pathway programs, no study has included students like those in Mount Sinai’s Humanities and Medicine (HuMed) early-acceptance program, who are selected in part for their perceived early aptitude for compassionate care. Results of this survey may indicate wide-spread utility and need for HuMed and HuMed-like programs.
ABSTRACT 49

Strong Correlations between Empathy, Emotional Intelligence and Personality Traits in Podiatric Medical Students

Authors: Peter Barbosa PhD, Kurtis Bertram BS, John Randazzo BS, Nathaniel Alabi BS, Jack Levenson BS, John T. Doucette PhD

Purpose: The ability of healthcare providers to show empathy towards their patients results in a number of positive outcomes improving quality of care.1-3 Additionally, emotional intelligence (EI) is a skill that furthers this relationship and can substantiate an all-encompassing and personalized manner of treating patients.4 Furthermore, personality traits of the clinician may be another factor, either positively or negatively influencing that relationship, and how it may mediate better outcomes.5,6 It has been documented that by their third year of medical education students empathy significantly decreases.7-9 This study was designed to measure empathy, emotional intelligence, and personality traits of students in podiatric medicine, and to investigate the interrelationship between these qualities.

Methods: Observational Cross Sectional. Data Collection: Anonymous Web-based Survey Participants: 150 students registered at the New York College of Podiatric Medicine (NYCPM) Four Survey Sections: 1) Demographics 2) Empathy: The Jefferson Scale of Physicians’ Empathy 3) Emotional Intelligence (EI): the Assessing Emotions Scale 10 4) Personality Traits: The NEO-FFI-3 (60-item version of the measure of the five domains of personality -- Neuroticism, Extraversion, Openness, Agreeableness, and Conscientiousness) Scores in empathy, as the primary outcome measure, were correlated to gender and emotional intelligence. Significance level was set for p<0.05. SAS is the statistical package used for database creation and analyses. Categorical variables are presented using frequencies and counts. Continuous variables will be presented using means, standard deviations and 95% confidence intervals. Analysis of variance (ANOVA) and two-sample t tests were used as appropriate to test for differences in mean scores among groups. The relationship between baseline state of emotional intelligence and baseline score on empathy was assessed using Pearson’s Correlation Coefficient.

Results: Empathy levels, as assessed by the Jefferson Scale of Physicians Empathy, were demonstrated to significantly correlate to EI scores – Pearson correlation coefficient of 0.62 (p<0.0001). Females scored significantly higher on the Jefferson Scale of Physicians Empathy when compared to males (p<0.001); however, no significant differences were observed in EI by gender. Personality traits - neuroticism, extraversion, openness, agreeableness and consciousness - were measured using the NEO Five-Factor Inventory and all significantly correlated to empathy.

Conclusion: These results indicate that EI, gender and personality traits could serve as correlates for empathy in podiatric medical students. These correlations could serve as guidance for possible curriculum amendment and improvement in all fields of medical education.
Assessing the Psychological Impact of Medical Student Participation in the Hurricane Sandy Relief Effort

Authors: Phoebe Prioleau MPH, David Anderson BA, Robert Yanagisawa MD, Craig Katz MD

Purpose: Medical students can provide a ready and abundant source of volunteers in the period following disasters. In October 2012, Hurricane Sandy flooded areas of New York City, causing massive damage to infrastructure. In the storm's aftermath, students from the Icahn School of Medicine at Mount Sinai assisted with hospital patient intake and mounted a community-based response in affected areas. The objective of this study was to assess student involvement and its psychological impact, looking specifically at posttraumatic symptoms and growth.

Methods: A survey was administered to students at Mount Sinai that contained the Posttraumatic Growth Inventory, elements from the Davidson Trauma Scale, and questions assessing the extent of their involvement and aspects of professional satisfaction. Students in the class of 2016 were targeted with a paper survey, since this was the group most involved in the relief effort; all other classes were asked via email to complete an online version. Data were analyzed using frequency counts and t-tests in SPSS Version 22.

Results: We collected 140 responses, 99 of which were from the classes of 2015 or 2016 (first- and second-year medical students at the time of Hurricane Sandy). Seventy of these 99 reported being involved in the disaster relief effort in some capacity. In the month after the disaster, these volunteers were more likely to want to help (t=2.56, p=0.012), feel capable of helping (t=4.44, p<0.001), have an increased desire to become a physician (t=2.91, p=0.004), feel angry (t=2.87, p=0.005), and feel sad (t=2.44, p=0.017). In the most recent month before the survey, volunteers were still more likely to report feeling capable of helping (t=2.10, p=0.039) and were also more likely to report feeling anxious (t=2.14, p=0.036).

Conclusion: Students at all levels of medical training can help after a disaster. Medical students involved in a disaster response do not necessarily experience greater overall distress, though volunteers may be more vulnerable to sadness and anger. Post-disaster involvement may enhance medical students’ confidence in both their career choice and their ability to help others.
ABSTRACT 51

A Comparison of Individualized Feedback vs. Standard Didactic Lecture to Teach Interpersonal Communication Skills to Emergency Medicine Residents: A Multicenter Randomized Controlled Trial

Authors: Melissa Leber MD, Chen He MD, Saadia Akhtar MD, Shellie Asher MD, Theodore Bania MD, Christopher Di BA, Eric Steinberg DO, Allison Webster MD, Mark Clark MD

Purpose: Effective communication and interpersonal skills by residents are integral to providing quality patient care and to achieving patient satisfaction. The ACGME views these skills as critical to residency education and includes them among the core competencies. We hypothesize that providing residents with individualized direct feedback of actual patient encounters is an effective way of teaching interpersonal communication skills and is a superior teaching method to the traditional didactic format.

Methods: We randomized 44 hypothesis-blinded residents at three ACGME accredited Emergency Medicine residencies into two intervention groups: didactic lecture or individualized feedback. A questionnaire was utilized which contained nine questions about physician communication and interpersonal skills and one summary question that indicated the patient’s overall experience with the resident by asking if the patient would want to be cared for by that resident again. Twenty-five questionnaires were collected from patients for each resident prior to intervention based on a convenience sample. Each positive response on the survey was given one point, with a maximum score of nine points per survey. After each resident completed the assigned intervention, an additional 25 questionnaires were collected from his or her patients. We compared the results of the pre- and post-intervention questionnaire scores to measure improvement of the resident’s interpersonal skills in response to the intervention. We also compared the improvement in the patients’ overall experience between the two groups.

Results: Forty-four residents at the three ACGME accredited EM residency training programs were randomized into two intervention groups (16 didactic lecture, 19 direct feedback). Residents in the direct feedback group demonstrated greater improvement of interpersonal skills, 7.61% (95 CI 5.2%-10%), compared to the didactic lecture group, 1.82% (95 CI -1.4%-5%). Additionally, residents in the direct feedback group demonstrated greater improvement in their patients’ overall desire to be cared for by that resident again, 6.46% (95 CI 3.8%-9.1%), compared to the didactic lecture group, 0.23% (95 CI -3.2%-3.6%).

Conclusion: Direct feedback is an effective method of teaching communication and interpersonal skills to emergency medicine residents and is superior to traditional didactic lectures. One aspect of the study which could be modified for future studies is the method we used in which to educate participants in the didactic lecture group. In our study, we used a self-directed PowerPoint lecture that participants watched independently. It is challenging to directly correlate this learning technique with traditional lecture. We evaluated a total of forty-four residents and this study would be more powerful if we were to increase the sample size to our original goal of 100 residents. Using direct feedback to teach professionalism is a promising new strategy which can be incorporated into the teaching and evaluating of Emergency Medicine ACGME core competencies.
ABSTRACT 52

The Evaluation of Different Compositions of Ultrasonographic Contrast for Confirmation of Central Venous Catheter Placement

Authors: Michael Doctor MD, Sebastian Siadecki MD, Gabriel Rose DO, Rachel Berkowitz MD, Danielle Matilsky MD, Turandot Saul MD

Purpose: Traditionally, a chest radiograph is performed to confirm the location and depth of the tip after central venous catheter (CVC) placement. Bedside ultrasound is performed real-time, does not require patient repositioning, and is able to directly visualize the right atrium. Microbubble contrast-enhanced ultrasound may facilitate CVC tip position localization and the addition of blood can significantly increase its echogenicity. To evaluate various air-blood-saline sonographic microbubble contrast agents for their echogenicity, ability to be visualized, ability to define the endocardial borders and sonographer preference.

Methods: IACUC approved prospective study. A CVC was inserted into the right internal jugular vein of a 20 kg Yorkshire swine under general anesthesia. Contrast mixtures were created according to Table 1. They were attached to a 3-way stopcock, agitated and injected while echocardiographic video clips were recorded. These were later reviewed by 25 physician sonographers.

Results: In both the subcostal and apical 4 chamber views, all reading physicians reported increased overall echogenicity, a higher peak echogenicity, and greater personal preference for blood containing solutions. In each category, nearly all reading physicians preferred the lower percentage blood containing mixtures (contrast 2 and 3) over the higher percentage blood containing mixture (contrast 4).

Conclusion: The use of microbubble contrast-enhanced ultrasound to verify CVC placement has been previously described in various settings. Compositions of microbubble contrast including various proportions of saline, blood and air are possible, and can be readily prepared at the bedside. Our study suggests that the inclusion of 1-3 parts out of 10 of the patient’s blood in the preparation of the contrast mixture increases the echogenicity of the contrast, results in better visualization of both the contrast and the endocardial border, and would be the preferred mixture among resident physicians of various levels of experience.
ABSTRACT 53

An Assessment of the Ultrasound Curricula of Osteopathic Emergency Medicine Residencies

Authors: Nicholas Avitabile DO, Nicole Kaban MD, Resa Lewiss MD, Turandot Saul MD

Purpose: There is currently no standardized osteopathic (DO) curriculum for emergency ultrasound (EUS) amongst the 48 accredited DO residency programs. The requirement as a joint statement of the American College of Osteopathic Emergency Physicians and the American Osteopathic Association asks residents to perform 40 EUS examinations during training. The 2008 American College of Emergency Physicians guidelines suggest more detailed EUS graduation requirements. Also, the Accreditation Council for Graduate Medical Education has designated EUS as one of the 23 milestones. It is now imperative that DO programs be at the same level as the allopathic programs since the major accrediting bodies have recently agreed to a single accreditation system for graduate medical education programs. This survey study sought to assess all DO emergency medicine residencies. An analysis was performed to summarize the state of EUS training. This may contribute to a future standardized curriculum.

Methods: An anonymous email survey was sent to the DO EUS director or residency program director. Associations between categorical variables were assessed using Fisher’s Exact test. Comparisons between medians of continuous variables were made using Wilcoxon’s Rank Sum test. The association between two continuous variables was assessed using Pearson’s Correlation, and the correlation was tested for significance using the z-test. Two-sided p-values were calculated with p<0.05 considered as significant.

Results: 39 of 48 programs responded (81% response rate). 59% (23/39) of programs had an EUS director. Programs with an EUS director were more likely to require a specified number of scans as a graduation requirement. (Programs with EUS director: 90.9% required a specified number of scans; programs without EUS director: only 60.0% required a specified number of scans.) The difference was statistically significant (p=0.042). 65% of the programs had quality assurance during the rotation. 35% of the programs had faculty evaluate the resident use of ultrasound on shift. No program had an EUS fellowship. Reported barriers to EUS education included: no protected time for EUS faculty (65%), faculty disinterest (57%), difficulty recruiting EUS focused faculty (49%), difficulty purchasing hardware (46%), no QA process (27%), and no archiving system (27%).

Conclusion: There is a considerable amount of variability in the resources and scan requirements for graduation amongst DO EM programs. Our data suggests that improving DO EUS education may begin with the recruitment of an EUS director. If DO EM residencies adopt a single and similar set of graduation requirements as allopathic EM residencies, DO uniformity may increase amongst trainees.
Emergency Resident Driven Procedural Series to Improve Understanding and Ability to Perform Emergency Procedures

Authors: Candice Cruz MD, Ram Parekh MD

Purpose: Introduction/Background: In this innovative educational curriculum, senior residents teach junior residents emergency procedures in small-group format with attending supervision. Prior procedural series in EM residency training have focused on the use of single expert demonstrators typically in lecture format. In this approach, the resident becomes the expert and the teacher. Educational Objectives: To improve understanding and performance of both common and uncommon procedures in Emergency Medicine. The goal is to have senior residents teach junior residents how to perform procedures in small groups with hands-on skills practice and direct supervision.

Methods: Every 10 weeks, residents are exposed to 1-2 hours of a procedural series lab. Approximately 4-6 senior residents are chosen at random to lead a small group discussion, followed by hands-on practice on a specific procedure. Topics are organized by anatomic system in which approximately 4-6 procedures are taught per session. Small breakout groups consist of junior residents rotating through stations. Group leaders are given leeway to instruct by videos, hands-on props, followed by directly observed skills practice on models or mannequins. An attending physician is assigned to each series and is available to assist group leaders.

Results: I can provide tables.

Conclusion: In this resident driven procedural series, senior residents become experts and teachers in common and uncommon emergency procedures. Junior residents learn, actively, in small groups from their senior peers. A survey of 24 residents were performed and 75% agreed that the procedural series increased their understanding of common emergent procedures, while 70% agreed that the procedural series increased their understanding of uncommon emergent procedures. Junior residents reported increased comfort level with these procedures. Future research would be directed to test knowledge-retention and assess clinical outcomes.
ABSTRACT 55

The Effects of Cardiac Arrest Simulation on Healthcare Providers' Adherence to Advanced Cardiac Life Support Algorithms and Individual/Group Perceived Performance

Authors: Christie Lech MD, Kevin Hu MD, Peter England MD, Suzanne Bentley MD, MPH, Stuart Kessler MD

Purpose: Given the inherent high stress situation of resuscitating a patient in cardiac arrest, it is imperative that healthcare providers utilize set algorithms along with effective crisis resource management skills to care for these patients. Simulation training allows knowledge to be practiced safely, in a controlled environment. This study will use in-situ simulation to teach resuscitation of the cardiac arrest patient to healthcare providers and allow them opportunities to identify their weaknesses and strengths during these situations.

Methods: A prospective cohort of healthcare providers completed a pre-intervention survey assessing Advanced Cardiac Life Support (ACLS) skills and perceptions of team dynamics. This was followed by the intervention phase of the study, featuring simulation training sessions during which providers were assessed via a checklist of critical actions by a trained observer and then debriefed using the plus/delta model in addition to a standardized discussion of resuscitation and crisis resource management skills. All participants completed a post-intervention survey. In the final portion of the study, the checklist and surveys were again completed after participants were observed by researchers during real-life cardiac arrest resuscitations.

Results: Preliminary pre-intervention data captured 66 residents and physician assistants and 29 of those 66 completed simulation sessions and post-intervention testing. Pre-intervention data indicates that only 36% of residents surveyed “have a clear sense of their role” during a cardiac arrest resuscitation. 79% of participants felt methods used during their ACLS courses were adequate in learning to run a code. Participants specifically identified the use of equipment (91%) and discussion with team members (77%) as the most helpful in their learning of ACLS skills. Participants recognize residents as the code leader 23% of the time and only 64% thought code situations were run in an organized manner. Finally, early results indicate that knowledge scores significantly increased post-intervention (70% versus 82%, respectively, p < 0.05).

Conclusion: Initial data indicate that official ACLS training may alone be insufficient to train health care providers to participate in and lead resuscitations satisfactorily. Education utilizing in situ simulation may serve to increase provider confidence and improve organization and team roles during codes. Furthermore, the early data supports the hypothesis that resuscitation simulation and debriefing may improve provider knowledge, with a trend towards improved crisis resource management skills, including clarity of roles in resuscitation scenarios.
Real Time Simulation: A Novel Curricular Approach to Enhance Critical Care Education for Emergency Medicine Residents

Authors: Suzanne Bentley MD, MPH, Gurpreet Mudan MD, Angela Hua MD, Neil Singh MD

Purpose: Emergency Medicine (EM) residency involves training in critical care. This type of training varies based on the qualities of each particular hospital site, the patient population that it serves, and available resources. One way to standardize and enhance educational experiences and create a more hands-on environment is through use of simulation. The purpose of this study is to create a simulation based critical care curriculum for EM residents, based on low-technology, high fidelity simulation cases.

Methods: Pre and post-assessments using surveys and knowledge-based testing will be obtained from each participant. PGY 2 EM residents will also be tested prior to this intervention via simulated cases. They will be graded on 3 cases, which will be employed to also give real time feedback to the learners. PGY 3 EM residents, who will not undergo this curriculum, will be similarly tested as a control. The curriculum will be conducted over approximately 4 months and will consist of 6 critical care cases. The simulation cases will occur in the Emergency Department and senior residents or attendings will conduct the cases using templates created by the research team. The cases will be conducted in-situ in resuscitation area and involve formal debriefing and standardized discussion. At the completion of the PGY 2 year and this curriculum, the PGY 2 class will be retested to assess their skills.

Results: Data from surveys, pre- and post-intervention testing, and intervention case scores will be obtained and analyzed to determine if there was change in the intervention group critical care knowledge based on being taught through this novel curriculum, as compared to the PGY-3 control group.

Conclusion: It is anticipated that those residents in the intervention group who complete this novel, simulation based critical care curriculum will perform better than those in the control group on various areas of critical care.
Teaching Cognitive Errors: Simulation Is Not Better Than Lecture

Authors: Benjamin Schnapp MD, Kaushal Shah MD

Purpose: Cognitive errors are an important cause of morbidity and mortality in the hospital but are not commonly taught in the medical school curriculum. Previous research has suggested that a lecture format is poor for teaching these errors. Our objective was to determine whether simulated cases, being more immersive, would improve medical student acquisition of cognitive errors more than lecture learning.

Methods: All 10 fourth year medical students enrolled in an intern year preparation elective were eligible and completed an online multiple choice pretest asking participants to correctly identify 8 cognitive errors (e.g. premature diagnostic closure) selected as the most important for trainees by consensus of five attendings. Half the errors were randomized to the lecture condition and taught via PowerPoint and half to the simulation condition and presented via simulated cases and debriefings. After 6 weeks, the pretest was presented to students again as a posttest and the results were compared with descriptive statistics and t-tests. Participants were blind to the objectives throughout.

Results: Ten medical students participated in the study; 100% completed the posttest. Mean errors correctly identified on the pretest were similar between the lecture and simulation conditions (45% and 43% respectively). Consistent with prior research, there was a non-significant improvement in correctly identified errors in the lecture condition (16% 95%CI 0-31%). There was also a non-significant improvement in correctly identified errors in the simulation condition (5% 95%CI -11% to 21%). There was no significant difference between the improvements in the lecture and simulation conditions (p=0.50).

Conclusion: Simulation does not appear to be a better format than lecture for teaching medical trainees about cognitive errors. New methods, such as a multimodal approach using readings, lecture, simulation and discussion, should be examined to best teach this essential topic to junior learners.